A STUDY TO ASSESS THE EFFECTIVENESS OF COMPUTER ASSISTED TEACHING PROGRAMME ON KNOWLEDGE AND ATTITUDE REGARDING MANAGEMENT OF DENGUE HEMORRHAGIC FEVER AMONG STAFF NURSES AT SELECTED HOSPITAL, KERALA.

A DISSERTATION SUBMITTED TO THE TAMILNADU
Dr. M.G.R. MEDICAL UNIVERSITY, CHENNAI,
IN PARTIAL FULFILLMENT FOR THE DEGREE OF

MASTER OF SCIENCE IN NURSING

MEDICAL SURGICAL NURSING (Critical Care Nursing)

BY

301612651

SRESAKTHIMAYEIL INSTITUTE OF NURSING AND RESEARCH

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KUMARAPALAYAM (PO),

NAMAKKAL DISTRICT – 638 183.

OCTOBER – 2018

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EXAMINERS:

1. ……..

2. …….

DECLARATION

I hereby declare that this dissertation entitled **A STUDY TO ASSESS THE EFFECTIVENESS OF COMPUTER ASSISTED TEACHING PROGRAMME ON KNOWLEDGE AND ATTITUDE REGARDING MANAGEMENT OF DENGUE HEMORRHAGIC FEVER AMONG STAFF NURSES AT SELECTED HOSPITAL, KERALA".** It has been prepared by me under the guidance and supervision of **Dr.Jamunarani.R, Ph.D,** Principal Sresakthimayeil Institute of Nursing and Research, Kumarapalayam. **Mrs.Gowri. B, M.sc, Nursing, Head of the department (Medical Surgical Nursing)**, Sresakthimayeil Institute of Nursing and Research, Kumarapalayam. As a partial fulfillment of Master Science in Nursing degree under The TamilNadu Dr.M.G.R Medical University, Chennai this dissertation had not been previously formed and this will not be used for award of any other degree. This dissertation represents independent original work on the part of the candidate.

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301612651

ABSTRACT

Back ground: We are familiar with the following statements, Mosquitoes are worse than Tigers and its very difficult to control Dengue fever and Dengue hemorrhagic fever, until it subside dengue fever has been main health problem of the world. This study to assess the effectiveness of computer assisted teaching programme on knowledge and attitude regarding management of dengue hemorrhagic fever. **Objectives:** To assess the level of knowledge and attitude regarding Management of dengue hemorrhagic fever before and after Computer Assisted teaching **,**To determine the co-relation between knowledge and attitude regarding management of dengue hemorrhagic fever among staff nurses. To find the effectiveness between post test knowledge and attitude regarding Management of dengue hemorrhagic fever among staff nurses with selected demographic variables. **Design:** Pre experimental- one group pre test and post test was used. **Setting:** The study was conducted in Huda trust hospital, Kerala**. Sample size:** The total sample size was 60 staff nurses. **Sampling technique**: Simple random sampling technique was used to select the sample. **Methods:** Pre test was done by using structured questionnaires and attitude scale it took around 30 minutes after computer assisted teaching programme was given by using LCD Projector on management of Dengue Hemorrhagic fever was done and post test was done by using the same scale on 8^{th} day. **Findings:** From the findings of the study it can be concluded that most 39(65%) of the were in age group of 18-22 years. Most 41(68.33%) of the staff nurses were female. Most 25(41.67%)of the staff nurses knew the information through television . The pre test knowledge level of mean was assessed among staff nurses, mean was 11.58 standard deviation was 1.22 that

shows the staff nurses were in poor knowledge. Pre test level of practice score was 24.31 and standard deviation was 3.51 it shows that staff nurses were poor attitude in management of dengue hemorrhagic fever. After computer assisted teaching programme, the post test knowledge level of mean was 21.2, and standard deviation was 1.68 and post test attitude level of mean was 43.26 ,standard deviation was 3.54 that shows the staff nurses knowledge and attitude level was highly improved. And difference in mean percentage of pre and post test knowledge level was 39% and difference in mean percentage of pre and post test attitude level was 30% it seems to be the study was effective to the staff nurses regarding management of dengue hemorrhagic fever. Comparison of pre and post test level of knowledge and attitude level was analyzed by using paired 't' test. Calculated 't value was 0.62 which was greater than table value. So it was significant at P.0.05% level. Correlation between knowledge and attitude was done by using Karl pearson's correlation method. The calculated 'r' value was 0.62(0.62>0.28) .The calculated ' r' value was higher than the table value. Hence it was a positive correlation between knowledge and attitude **Conclusions**: Based on the findings mean post knowledge and attitude scores was higher than the pre test knowledge and attitude regarding dengue hemorrhagic fever. The result indicates computer assisted teaching programme on management of dengue hemorrhagic fever was found to be significantly effective in improving knowledge and attitude among staff nurses. The study proves that computer teaching programme on management of dengue hemorrhagic fever was effective in improving the knowledge and attitude.

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CHAPTER – I

INTRODUCTION

"Dengue is a very significant world public health problem which has largely been ignored in the developed world".

- ***Rory Marks***

The terms "dengue" is a Spanish attempt at the Swahilli phrase "Ki denga pepo" meaning "cramp-like seizure caused by an evil spirit". Dengue is an acute, febrile viral illness caused by an arbovirus of the genus flavivirus with four serotypes dengue virus 1 DEN-1,dengue virus 2 DEN-2,dengue virus 3 DEN-3 and dengue virus 4 DEN-4.

Dengue and dengue hemorrhagic fever are illness caused by a viral infection that spreads through the bite of the Aides mosquito.

Dengue fever, commonly known as "**break bone fever**" for its classic symptoms of severe joint and muscle pain and high fever, once mostly occurred in tropical and subtropical zones. But during the last 20 years, dengue fever and its more severe form, **dengue hemorrhagic fever** (DHF), have been spreading worldwide. **Factors** contributing to the spread include increasing international travel, migration, urbanization, and perhaps even global warming, among others.. **World Health Organization (WHO). (2014)**

In India, in the present year there are 3021 positive cases are diagnosed and 33 of them expired. No exact treatment has been discovered for dengue as of date, but symptom wise treatment is in progress. The dengue prevention teams work predominantly in eliminating breeding sites of the dengue mosquito in areas where the scare of epidemic is high.

Dengue viruses are arbovirus capable of infecting humans, and causing disease. These infections may be asymptomatic or may lead to "classical" dengue fever, or deng. The worldwide incidence is estimated to be 50 to 100 million cases of dengue fever (DF) and several hundred thousand cases of dengue hemorrhagic fever (DHF) per year.

The first isolation of dengue virus was reported from India in 1964,and Dengue virus serotype 3 in 1968.Ever since, intermittent reports of Dengue and its sequel have come from various parts of the country. These includes reports from Ludhiana, Delhi, Luck now, Calcutta, Chennai, Mangalore, Assam, Nagaland and Vellore. **Hales S et al.(2015)**

The World Health Organization (WHO) consider dengue as a major global public health challenge in the tropic and subtropics nations. Dengue has seen a 30-fold upsurge worldwide between 1960 and 2010, due to increased population growth rate, global warming, unplanned urbanization, inefficient mosquito control, frequent air travel, and lack of health care facilities. Two and a half billion people reside in dengue-endemic regions and roughly 400 million infections occurring per year, with a mortality rate surpassing 5–20% in some areas.

The first reported case of dengue like illness in India was in Madras in 1780, the first biologically proved epidemic of DF in India occurred in Calcutta and Eastern Coast of India in 1963-1964. Dengue virus infection presents with a diverse clinical picture that ranges from asymptomatic illness to DF to the severe illness of dengue hemorrhagic fever/dengue shock syndrome (DHF/DSS). Oral mucosal involvement is seen in approximately 30% of patients, although oral features are more frequently associated with DHF than with DF.

Over 2.5 billion people – over 40% of the world's population – are now at risk from dengue. WHO currently estimates there may be 50–100 million dengue infections worldwide every year. **Seth(2014)**

Classical dengue fever and dengue hemorrhagic fever are now endemic in the sub-continent of Asia. Currently, dengue is endemic in 112 countries, making dengue fever one of the world's most common emerging infectious diseases. Multiple epidemics have also been reported in different regions of India, Sri Lanka and other Asian countries.The WHO reported 1931 laboratory confirmed cases in 2006, 1226 cases in 2007, 2469 cases in 2008, 1085 cases in 2009, 11,024 cases in 2010 and 17,057 cases in 2011. A total of 4388 cases of suspected dengue fever have been reported from January 01 to September 11,2013 .

Dengue doesn't spread from one person to the other, which is why you can prevent this disease by keeping your surroundings clean and wearing protective clothing. Mosquitoes are active between Auguest to October, which also happen to be monsoon months. The puddles of water formed around our houses, makes a perfect breeding place for the mosquitoes. You can reduce their habitat by clearing

the water from your surroundings and use natural repellents like Lemon Eucalyptus Oil, Lavender, Neem Oil and Cinnamon Oil to protect yourself against mosquito bites.

DENGUE CASES AND DEATHS: 5 WORST AFFECTED STATES IN 2017

	2014		2015		2016		2017	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Kerala	2575	11	4075	25	7439	13	18,727	35
Karnataka	3358	2	5077	9	6083	8	13,016	5
Tamil Nadu	2804	3	4535	12	2531	5	11,552	18*
West Bengal	3934	4	8516	14	22,865	45	5389	13
Delhi	995	3	15,867	60	4431	10	4545	1

*Data available with the National Vector Borne Disease Control Programme (NVBDCP) till 8 October, 2017. However, the Tamil Nadu state health department has confirmed that 80 have died since January.

NEED FOR THE STUDY

Dengue is a viral disease, transmitted by the infective bite of a particular mosquito known as Aides Aegypti. Human being develops disease after 5 – 6 days of being bitten by an infective mosquito. It occurs in two forms: Classical Dengue fever also known as "break bone" fever and Dengue Hemorrhagic Fever (DHF) which is life threatening. It is very common after rainy season. It is highly contagious and spreads from one person to another through mosquito bites. It is widespread in tropical and sub-tropical regions. It is a very common disease in India since last two decades. Dengue can affect everybody, irrespective of their age and gender. However, deaths are common amongst children during DHF outbreak. **Garg J, Rao YK (2015)**

According to **National Vector Borne Disease Control Programme (NVBDCP) (2015)** maximum numbers of cases were reported from Delhi followed by Punjab, Haryana, West Bengal, Gujarat, Karnataka, Maharashtra, Kerala, Tamil Nadu, Rajasthan, Andhra Pradesh, Uttar Pradesh, Orissa, Madhya Pradesh, Arunachal Pradesh, Bihar, Uttarakhand, Telangana and other states.

According to the **World Health Organization (2018)** there are about 390 million cases of dengue fever worldwide, and of the total number of cases, 96 million require medical treatment. India also saw a doubling up of cases of dengue from 2014 to 2015 and the worst hit city was Delhi with over 1800 cases of the fever. The National Dengue survey by government conducted in 2016 reported 1,11,000 cases, out of which, 227 people lost their lives to the mosquito borne disease across India.

Chennai, at the Rajiv Gandhi Government General Hospital, of the 2,950 patients who have been admitted with fever on October 14,2017, 519 have tested positive for dengue. Public health officials have confirmed 40 deaths due to dengue and an equal number of casualties due to viral hemorrhagic fever or shock syndrome, triggered by dengue, since January 2017. The directorate of National Vector Borne Disease Control Programme(NVBDCP),11,552 cases have been reported in Tamil Nadu this year, a 350% increase in the number of cases compared to last year. State health secretary J. Radhakrishnan said that as many as 35 people have died due to dengue in the state Tamil Nadu 2017.

From 1975 through 2009, symptomatic dengue virus infections were classified according to the WHO guidelines as dengue fever, dengue hemorrhagic

fever (DHF), and dengue shock syndrome (the most severe form of DHF). The case definition was changed to the 2009 clinical classification after reports that the case definition of DHF was both too difficult to apply in resource-limited settings and too specific, as it failed to identify a substantial proportion of severe dengue cases, including cases of hepatic failure and encephalitis. The 2009 clinical classification has been criticized for being overly inclusive, as it allows several different ways to qualify for severe dengue, and nonspecific warning signs are used as diagnostic criteria for dengue. Last, the new guidelines have been criticized because they do not define the clinical criteria for establishing severe dengue (with the exception of providing laboratory cutoff values for transaminase levels), thereby leaving severity determination up to individual clinical judgment.

A small percentage of persons who have previously been infected by one of dengue sero types develop bleeding and endothelial leak upon infection with another serotype. This syndrome is termed as dengue hemorrhagic fever (DHF). Some patients of dengue hemorrhagic fever develop shock (Dengue shock syndrome (DSS) which may cause death. Severe dengue infection may give rise to many complications such as liver failure, disseminated intravascular coagulation (DIC), encephalopathy, myocarditis, and acute renal failure & hemolytic renal syndrome.

Although shock in DHF/DSS has been attributed largely to decreased intravascular volume due to plasma leakage into interstitial spaces, a few recent studies have reported that it may be due to cardiac involvement. Cardiac manifestations in dengue virus infection can range from asymptomatic bradycardia to life threatening myocarditis. Various studies have quoted several cardiac

manifestations of dengue infection like sinus bradycardia, transient Av blocks, transient ventricular arrhythmias and pericardial effusion.

The worldwide incidence is estimated to be 50 to 100 million cases of Dengue fever and over 500,000 cases of dengue haemorrhagic fever per years. Of these, 90% are children less than 15 years of age with the mortality average of 5% of dengue haemorrhagic fever cases. Annually, approximately 24,000 deaths are attributed to dengue worldwide. In 2007 there were more than 890,000 reported cases of dengue in the Americas, of which 26000 cases were dengue haemorrhagic fever.

As stated earlier, in Tamil Nadu, the outbreaks of dengue were noticed in Vellore, North Arcot district in 1961. During this period, an outbreak was also noticed in Madras (Chennai) in 1965. The occurrence of dengue fever was reported in villages in Dharmapuri district, Tamil Nadu in 1997 and in 2001. The presence of dengue fever for the first time in Coimbatore and Erode district of Tamil Nadu was reported during 1998 and 2000. There was an outbreak of dengue in Chennai in 2001 which was caused by dengue 2 and dengue 3 viruses. The outbreak of dengue in Kanyakumari district in July 2003 proved the presence of dengue serotype 3 virus in that area.

Dengue, a vector borne disease, has hit all major cities of the country, with the total number of cases by Nov 26 reaching 37,070 – a sharp increase from 18,860 cases and 169 deaths in 2011. Over 28,000 dengue cases and 110 deaths were reported in 2010. Kerala has reported the maximum of over 3,760 dengue cases, followed by Karnataka with 3,640 cases. Delhi, by mid-November, reported 1,980

cases. Deaths from dengue have been highest in Tamil Nadu which reported 60 deaths. Maharashtra had 59 deaths and Delhi had four deaths.

STATEMENT OF THE PROBLEM

A study to assess the Effectiveness of Computer Assisted teaching Programme on Knowledge and Attitude regarding Management of dengue hemorrhagic fever among Staff Nurses in selected Hospital, Kerala.

OBJECTIVES

- To assess the level of knowledge and attitude regarding Management of dengue hemorrhagic fever before and after Computer Assisted teaching
- To determine the co-relation between knowledge and attitude regarding management of dengue hemorrhagic fever among staff nurses.
- To find the effectiveness between post test knowledge and attitude regarding Management of dengue hemorrhagic fever among staff nurses with selected demographic variables.

HYPOTHESIS

H_1 : There will be a significant difference between pre test and post test knowledge and attitude regarding management of dengue hemorrhagic fever among staff nurses.

H_2 : There will be a significant co-relation between knowledge and attitude scores regarding management of dengue hemorrhagic fever among staff nurses.

H_3 : There will be a significant association between post test knowledge and attitude scores regarding management of dengue hemorrhagic fever among staff nurses after computer assisted teaching.

OPERATIONAL DEFINITION

1) **Assess:** Refers to the staff nurses responses to before and after Computer assisted teaching regarding management of dengue hemorrhagic fever
2) **Effectiveness:** Refers to the extent to which the computer assisted teaching has achieved the desired effect in improving the knowledge and attitude regarding management of dengue hemorrhagic fever
3) **Computer assisted teaching :** It refers to planned teaching programme duly assisted by audio and video aid such as LCD projecter in delivering lecture on management of dengue hemorrhagic fever
4) **Knowledge:** It refers to correct responses from the staff nurses during interviews schedule regarding management of dengue hemorrhagic fever
5) **Attitude:** It refers to expressed attitude of respondents regarding management of dengue hemorrhagic fever as measured by attitude scale.
6) **Staff nurses:** In this study staff nurses are those staff nurses working in hospital
7) **Dengue hemorrhagic fever:** Dengue hemorrhagic fever is a grave sequel of dengue, marked by fever, headache, bone or joint and muscular pains, spontaneous bleeding, increased blood vessel permeability to proteins, and low platelet counts (100,000/mm3).

ASSUMPTIONS

- Staff nurses will have some knowledge and attitude regarding of management of dengue hemorrhagic fever.
- Computer assisted teaching will enhance the knowledge and attitude of staff nurses regarding management of dengue hemorrhagic fever.

THEORY APPLICATION

CONCEPTUAL FRAMEWORK

A conceptual framework is defined as a theoretical approach to the study of problems that are scientifically based which emphazies the selection,arrangement and classification of concept.

A theoretical frame work of reference that is based for observations, definition of concepts research designs, interpretations and generalizations. It provides the rationale for he predictions about relationship among variable in the research study. **B.T.Basavanthappa (2010).**

According to systems theory a system is a group of elements, which are considered to be individuals and their environment. An individual is capable of taking energy and information as input from environment and releases them to environment. This input when proceeded provides an output and continues to be so, as long as these four parts keep interacting.If there are changes in any of these parts, there will be changes in all the parts. This system is cyclic in nature that interacts with one another in order to achieve the goal. Feedback from within the system or from the environment provides information, which helps the system to determine

whether it meets its goal. Feedback from within the system or from environment provides information, which helps the system to determine whether it meets its goal. In this present study, these concepts can be explained as follows.

INPUT

Input refers to the process by which the system receives energy and information from the environment. According to this theory, patient is a system and has input within the system itself and acquired from the environment.

It is actively phase where a computer assisted teaching was administered to assess the knowledge and attitude regarding management of dengue hemorrhagic fever among staff nurses which was measured by using a structured questionnaire and attitude scale.

THROUGHPUT

It is the process that occurs in between the input and output process which enables the input to be transferred on output in such a way that it can be readily used by the system.

In this study throughput refers to staff nurses acquire knowledge and attitude regarding management of dengue hemorrhagic fever,includes Definition of dengue hemorrhagic fever, special characteristics of Aides mosquito, Epidemiological feature, mode of transmission, the life cycle of mosquito, incubation period, dengue hemorrhagic fever, signs and symptom of dengue hemorrhagic fever, laboratory test of dengue hemorrhagic fever,management dengue hemorrhagic fever, complication dengue hemorrhagic fever.

OUTPUT

Output is the end result or products of the products of the process. After processing the input, the system release the energy,and information to the environment as output.

In this study output refers to the change in knowledge and attitude after computer assisted teaching programme which was measured by post using a structured questionnaire and attitude scale.

FEEDBACK

Feedback refers to the process by which information is received at each stage of the system and is feed back as input to guide and direct the evaluation. It is the process that provides information about the systemic output.

It lays emphasis on strengthening the input and throughput.It is necessary if the result showed poor knowledge.

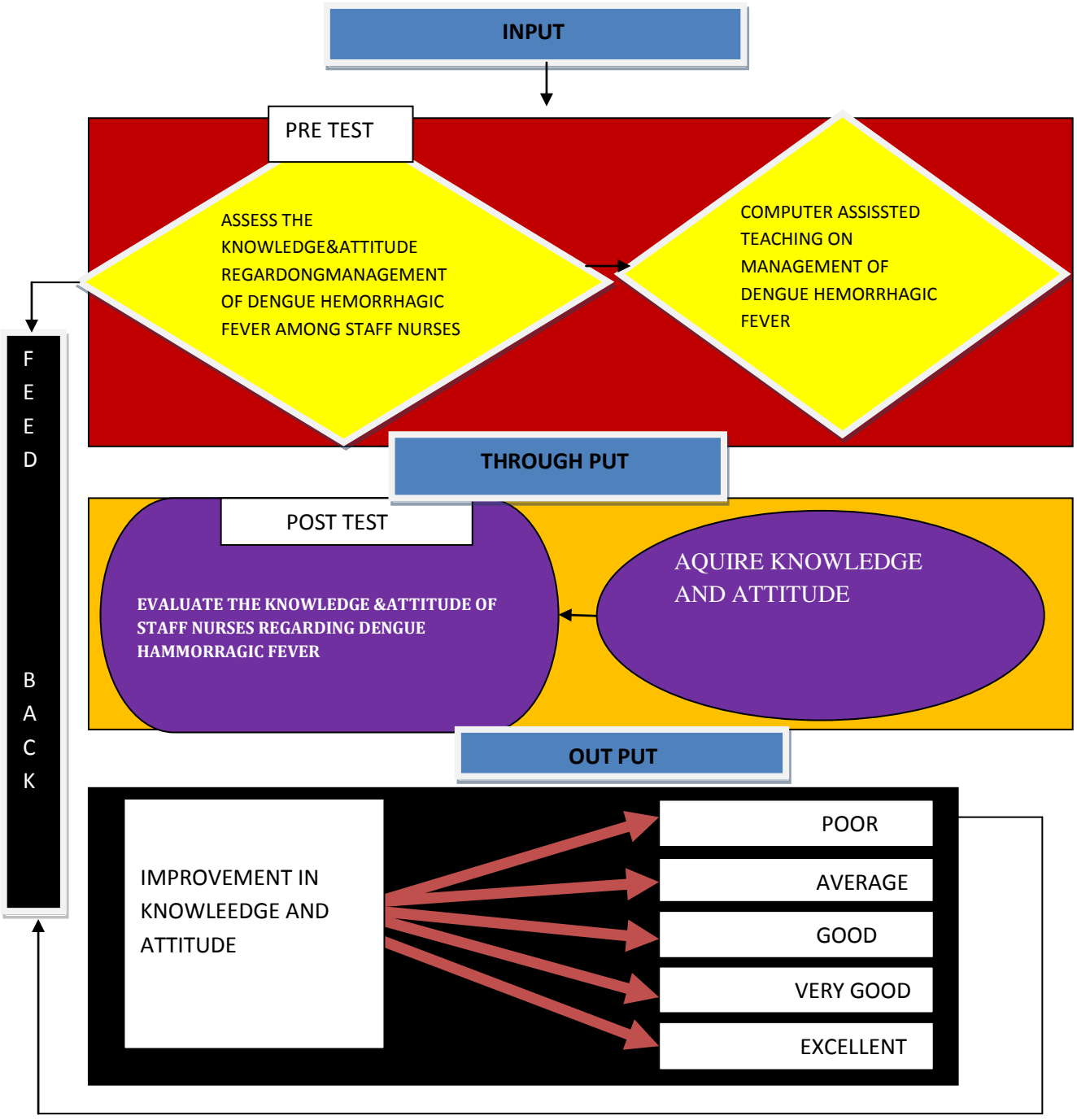

Fig.3.1 : CONCEPTUAL FRAME WORKBASED ON LUDWING VAN BERTALANFFY GENERAL SYSTEM THEORY

CHAPTER –II

REVIEW OF LITERATURE

Review of literature is an important step in the development of a research project. It involves the systematic identification, location, scrutiny and summary of written materials that contain information on research problem. **(Polit and Hungler, 2000).**

This chapter attempts to present a broad review of the study conducted, the methodology adopted and conclusion drawn by earlier investigations. It helps to study the problem in depth.

Related research literature was reviewed to broaden the understanding and to gain insight into the selected area under study. The review is organized in the following headings;

1. **Literature related to incidence and prevalence of Dengue Hemorrhagic fever.**

2. **Literature related to signs and symptoms and management of Dengue Hemorrhagic fever.**

3. **Literature related to Knowledge and Attitude regarding Dengue Hemorrhagic fever**

I. LITERATURE RELATED TO INCIDENCE AND PREVALENCE OF DENGUE HEMORRHAGIC FEVER

Stephen A. Lauer, Krzysztof Sakrejda (2018) statistical models that use biologically plausible covariates, observed by April each year, to forecast the cumulative DHF incidence for the remainder of the year. We perform cross-validation during the training phase (2000–2009) to select the covariates for these models. A parsimonious model based on preseason incidence outperforms the 10-y median for 65% of province-level annual forecasts, reduces the mean absolute error by 19%, and successfully forecasts outbreaks (area under the receiver operating characteristic curve = 0.84) over the testing period (2010–2014). We find that functions of past incidence contribute most strongly to model performance, whereas the importance of environmental covariates varies regionally. This work illustrates that accurate forecasts of dengue risk are possible in a policy-relevant timeframe

Nissi Mathew, Dr Jyothi Rajahamsan (2017) cross sectional study was conducted in Govt. Medical College, Thiruvananthapuram from July2014 to December 2014. Serum samples from 433 patients were screened for dengue NS1 Antigen, IgM and IgG enzyme-linked immunosorbent assay (ELISA) which helped in early detection and to differentiate primary and secondary dengue cases. **:-** 84 (19.4%) cases were positive for dengue infection, out of which 23(11.6%of patients) were positive for NS1 antigen showing early detection.37(44% of patients) had secondary dengue virus infection and the rest 47 (56% of patients) had primary infection. Serotype 2 was prevalent in the study population

Aruna Kumari Bandaru (2016) A study aimed to analyze the early predictors to differentiate primary from secondary dengue infection. This prospective study was conducted on 200 children having acute febrile illness between 3 months to 15 years age group. One hundred and five serologically confirmed dengue patients were included in the study and classified into primary and secondary dengue infection. Of the 105 serologically confirmed dengue, 62 (59%) were primary and 43 (41%) were secondary dengue infection. Primary dengue infection was more common in <1 year age group (35.5%), whereas secondary dengue infection was more common in 6-10 years age group children (41.9%). There was no difference in means of LFTs, but hyponatremia (<134 meq/L) and thrombocytopenia (<50,000/mm^3) were more frequent in secondary dengue infection. The mortality rate of dengue infection was 3.8%.

Meghnath Dhimal (2015) A cross-sectional survey in five districts of central Nepal between September 2011 and February 2012. We collected information on the socio-demographic characteristics of the participants and their knowledge, attitude and practice regarding DF using a structured questionnaire. Out of 589 individuals interviewed, 77% had heard of DF. Only 12% of the sample had good knowledge of DF. Those living in the lowlands were five times more likely to possess good knowledge than highlanders (P<0.001). Despite low knowledge levels, 83% of the people had good attitude and 37% reported good practice. We found a significantly positive correlation among knowledge, attitude and practice (P<0.001). Among the socio-demographic variables, the education level of the participants was an independent predictor of practice level (P<0.05), and education level and

interaction between the sex and age group of the participants were independent predictors of attitude level (P<0.05).

Jimmy Antony (2014) a study aims to describe the frequency, distribution and case fatality of dengue fever based on the variables such as age, sex and year. It is a hospital-based retrospective study of 5 years in tertiary care and teaching hospital in South India. The data were collected from the medical records department of the hospital and analyzed by using Microsoft excel. Out of 341 reported cases of dengue, 60.70% were males and 39.29% were females. In both males and females, the high proportion of cases were reported in adult age groups (>20 years). Case fatality rate of dengue fever is 1.2%, with 0.97% in males and 1.49% in females. Out of 341 cases, 333 (97.65%) were Classical Dengue Fever and remaining 8 cases (2.34%) were dengue hemorrhagic fever. More cases of dengue fever were reported in the adult age group (20 years and above) and in males compared to low age groups (<20 years) and females. It highlights the involvement of work component in the occurrence of disease. Community-based action program is required for source reduction activities in the outdoor area for arresting the breeding and multiplication of Aides mosquitoes and thereby to reduce the morbidity and mortality of dengue fever.

Frontiers of Information Technology (2013) A Critical Study of Selected Classification Algorithms for Dengue Fever and Dengue Hemorrhagic Fever. There are 50 million people suffer from it globally every year. Pakistan has been victim of this rapidly growing disease from last few years. The world health organization identified two main types of dengue fever. This paper appraises the selected classification algorithms for the classification of dengue fever (DF) and dengue

hemorrhagic fever (DHF) datasets. Naïve Bayes classifier, Decision Tree, K-nearest neighbor algorithm, multilayered perception algorithm and Support vector machines are considered here for classification of dengue fever. These algorithms are measured based on five criteria: Accuracy, Precision, Sensitivity, Specificity and false negative rate.

Kevin R.Porter (2009) a study stated that epidemiology of dengue and dengue hemorrhagic fever. The first two years of the study showed an incidence of symptomatic DEN disease of 18 cases per 1,000 person-years and an estimated asymptomatic/ mild infection rate of 56 cases per 1,000 person-years in areas of high disease transmission. In areas where no symptomatic cases were detected, the incidence of asymptomatic or mild infection was 8 cases per 1,000 person-years. Dengue-2 virus was the predominant serotype identified, but all four serotypes were detected among the cohort. Four cases of DHF and one case of dengue shock syndrome (DSS) were identified. Three of the four DHF cases were due to DEN-3 virus. The one DSS case occurred in the setting of a prior DEN-2 virus infection, followed by a secondary infection with DEN-1 virus

W K Cheah,(2009)A surveillance data analysis of dengue serotypes in Negeri Sembilan over a 1-year period in 2010 showed the presence of all serotypes. DEN 3 the predominant serotype in January, coexisted with DEN 2 until May. Thereafter, DEN 1 was the predominant serotype10. Other than circulation of the viruses from within the locality.

Rahman Marzilawati (2008) In a phylogenetic study of the DEN 2 strains that caused two major outbreaks in the country in 1990s, two different DEN 2

genotypes were identified: DEN 2 Asian 1 and DEN 2 Cosmopolitan. Eighty percent of the isolates were DEN 2Cosmopolitan, which was further divided into Clade I and Clade II. The latter was responsible for two major outbreaks in the 1990s. These strains originated from the same ancestral lineage, suggesting that both came from the same DEN 2 gene pool18.

II. LITERATURE RELATED TO SIGNS AND SYMPTOMS AND MANAGEMENT OF DENGUE HEMORRHAGIC FEVER

Dr. Pradeep C., (2016) A cross sectional study was conducted in Kannamangala village from July 2014December 2014. Totally 738 participants were enrolled in the study. The aim was to assess the knowledge and awareness, preventive measures and most prevalent source of information regarding dengue by using semi-structural questionnaire. Knowledge and practice regarding dengue fever is not satisfactory, 60% of the respondents said dengue is a serious illness and 68.8% said it is transmitted through mosquito bite and only 8% knew the name of the vector. Only 15.3% of the participants changed water in artificial container every week, 49.2% of the respondents got the information from Radio/TV followed by Newspaper/magazine. Only 15.4% of the respondents received information by Health personnel. Lack of awareness and improper practice towards dengue is explicit in this study. Emphasis should be more on creating awareness among people. Educational intervention has to be more effective in controlling dengue fever.

Shamimul Hasan, Sami Faisal Jamdar(2016) This article provide a detailed overview on dengue virus infections, varied clinical manifestations,

diagnosis, differential diagnosis, and prevention and treatment. Presenting features may range from asymptomatic fever to dreaded complications such as hemorrhagic fever and shock. A cute-onset high fever, muscle and joint pain, myalgia, cutaneous rash, hemorrhagic episodes, and circulatory shock are the commonly seen symptoms. Oral manifestations are rare in dengue infection; however, some cases may have oral features as the only presenting manifestation. Early and accurate diagnosis is critical to reduce mortality. Although dengue virus infections are usually self-limiting, dengue infection has come up as a public health challenge in the tropical and subtropical nations.

Mra Aye (2016) Case study report Dengue fever, the most common arthropod-borne viral infection in South East Asia,is increasing in prevalence due partially to increased awareness and better diagnostic methods. While hematologic complications, such as cytopeniae and bleeding, may occur in severe dengue infection due to a variety of aetiologies, reports of haemolytic anaemia in dengue fever are scan We report a case of severe dengue fever with haemolytic anaemia following the critical phase of infection.

Tauqeer Hussain Mallhi (2015) A retrospective analysis of dengue patients admitted to a tertiary care teaching hospital during the period of six years (2008 – 2013) was performed. Patient's demographics, clinical and laboratory findings were recorded via structured data collection form. Patients were categorized into dengue fever (DF) and dengue hemorrhagic fever (DHF). A total 667 dengue patients (30.69 ± 16.13 years; Male: 56.7 %) were reviewed. Typical manifestations of dengue like fever, myalgia, arthralgia, headache, vomiting, abdominal pain and skin rash were observed in more than 40 % patients. DHF was observed in 79 (11.8 %)

cases. Skin rash, dehydration, shortness of breath, pleural effusion and thick gall bladder were more significantly ($P < 0.05$) associated with DHF than DF. Multivariate regression analysis demonstrated presence of age > 40 years (OR: 4.1, $P < 0.001$), secondary infection (OR: 2.7, $P = 0.042$), diabetes mellitus (OR: 2.8, $P = 0.041$), lethargy (OR: 3.1, $P = 0.005$), thick gallbladder (OR: 1.7, $P = 0.029$) and delayed hospitalization (OR: 2.3, $P = 0.037$) as independent predictors of DHF. Overall mortality was 1.2 % in our study.

Denys Eiti Fujimoto (2014) descriptive study was performed to analyze the distribution of relative frequencies of clinical and laboratory variables. The study was carried out in Rio Branco with confirmed dengue fever cases. A total of 90,553 dengue cases were reported of which 7,447 had serologic confirmation; 267 cases had hemorrhagic manifestations and 193 patients were located. Nearly half of the patients had anemia and the mean of the lowest platelet count of these patients was 26.4×10^9/L. Platelet concentrate was transfused in 22.3% of cases with a mean of 7.5 IU/patient, fresh frozen plasma in 21.2% with a mean of 5.2 IU/patient and just 2.6% of patients received concentrated red blood cells with a mean of 3.2 IU/patient. Bleeding led to transfusions. Signs of plasma leakage and cardiopulmonary dysfunction were correlated to unfavorable outcomes. The pattern of clinical and laboratory criteria observed in this investigation does not differ from the literature. Transfusions were used as part of the treatment of dengue hemorrhagic fever manifestations. Some of the clinical manifestations may be related to unfavorable outcomes.

Nguyen Thanh Hung (2012) A prospective study of clinical and cytokine profiles of 107 infants with dengue hemorrhagic fever (DHF)/dengue shock

syndrome (DSS) was conducted. Fever, petechiae on the skin, and hepatomegaly were the most common clinical findings associated with DHF/DSS in infants. DSS occurred in 20.5% of the patients. Hemo concentration and thrombocytopenia were observed in 91.5% and 92.5% of the patients, respectively. Serologic testing revealed that almost all of the patients (95.3%) had primary dengue virus infections. These data demonstrate that clinical and laboratory findings of DHF/DSS in infants are compatible with the World Health Organization's clinical diagnostic criteria for pediatric DHF. The present study is the first to report evidence of production of cytokines in infants with DHF/DSS and to describe the difference between the cytokine profile of infants with primary dengue virus infections and children with secondary infections. Overproduction of both protein flammatory cytokines (interferon-γ and tumor necrosis factor–α) and anti-inflammatory cytokines (interleukin-10 and -6) may play a role in the pathogenesis of DHF/DSS in infants

III. LITERATURE RELATED TO KNOWLEDGE AND ATTITUDE OF DENGUE HEMORRHAGIC FEVER

Narila M Nasir, Baequni Baequni (2017) A quasi experimental study with pre and post-test design was carried out among 5th and 6th grades of elementary school students in 21 schools in Jakarta region. Seven schools received poster intervention and other 7 schools received flip chart intervention, while 7 schools were determined as the control group. Data from 630 students were collected to be analyzed during the study. The result showed that the students in the intervention groups had the likelihood to improve their knowledge 2.415 times (95% confidence interval: 1.620 – 3.601) for poster presentation and 1.527 times (95% confidence interval: 1.038 – 2.246) for flip chart when it was compared to the students who did

not received any intervention (control group). Although both interventions (poster and flip chart) have indicated the significant effect in increasing overall knowledge, but implementing health education through poster was more effective than flip chart to spread information among students. The students had a good knowledge on control measures to prevent DHF, but still need more improvement about action to tackle DHF patient in early stage of DHF symptoms such as caring and seeking health care.

DR.Rajesh (2017) A study was conducted on aggressive management of dengue shock syndrome in Apollo Hospital, Chennai,India.The data was collected by retrospective chart review in paediatric intensive care unit among 114 patients who received standard therapy recommended by World Health Organization and were designated as the WHO guidelines group(W), and 96 patients who were treated by paediatric ICU protocol and designated as a protocol group (P). The results revealed that the patients in each group were equally matched in terms of age, paediatric risk of mortality. The platelet counts were higher and mean score 42.2 was in the W group Vs with the protocol group and the mean score was 36.7.The paediatric intensive care unit mortality 16.6% Vs 6.3 %, P <.05 was significantly higher in the W group than in the protocol group, thus survival rate was higher for patients in the protocol group.

Jonas.(2017) A study conducted to assess the burden of dengue hemorrhagic fever and effectiveness of an intervention package in Myanmar among fatal and non fatal dengue hemorrhagic fever cases. The results concluded that both the fatal and non –fatal dengue haemorrhagic fever were estimated at 83 -86 %.

Uzma N (2017) A qualitative study was conducted on dengue prevention and control programmes through a review of recent. Studies on knowledge, beliefs and practices concerning dengue and dengue prevention. The results revealed that the adequate knowledge of dengue and prevention methods is found in close association with high rates of domiciliary infestation by Aedes Aegypti. Thus traditional education strategies, although efficient in transmitting information have failed to change population behaviour and also reveal two important issues that appear to explain these attitudes, representations of dengue and risks associated with mosquitoes and difficulties in avoiding infection of household water recipients due to sanitation problems in communities.

Meghnath Dhimal (2015) a stated to determine the socio-demographic characteristics of the participants and their knowledge, attitude and practice regarding DF using a structured questionnaire. Out of 589 individuals interviewed, 77% had heard of DF. Only 12% of the sample had good knowledge of DF. Those living in the lowlands were five times more likely to possess good knowledge than highlanders (P<0.001). Despite low knowledge levels, 83% of the people had good attitude and 37% reported good practice. We found a significantly positive correlation among knowledge, attitude and practice (P<0.001). Among the socio-demographic variables, the education level of the participants was an independent predictor of practice level (P<0.05), and education level and interaction between the sex and age group of the participants were independent predictors of attitude level (P<0.05). Therefore, massive awareness programmes are urgently required to protect the health of people from DF and to limit its further spread in this country

Chanyasanha C (2014) A cross-sectional descriptive study was conducted with 300 students between 12 and 16 years old currently attending secondary schools in the Bangkok metropolitan areas using self-administered questionnaires. Data were subsequently summarized using descriptive statistics. RESULTS: Only 18.0% of students had a good level of overall knowledge of DHF but more than half had a good level of perception of DHF The results also revealed that only 4.7% of students had a good level of preventive behaviour and 75.6% required improvement. The levels of knowledge, perception, and preventive behaviour were low.

Jimmy Antony, TM Celine(2014) it based retrospective study of 5 years in tertiary care and teaching hospital in South India. The data were collected from the medical records department of the hospital and analyzed by using Microsoft excel. Out of 341 reported cases of dengue, 60.70% were males and 39.29% were females. In both males and females, the high proportion of cases were reported in adult age groups (>20 years). Case fatality rate of dengue fever is 1.2%, with 0.97% in males and 1.49% in females. Out of 341 cases, 333 (97.65%) were Classical Dengue Fever and remaining 8 cases (2.34%) were dengue hemorrhagic fever. More cases of dengue fever were reported in the adult age group (20 years and above) and in males compared to low age groups (<20 years) and females. It highlights the involvement of work component in the occurrence of disease. Community-based action program is required for source reduction activities in the outdoor area for arresting the breeding and multiplication of Aedes mosquitoes and thereby to reduce the morbidity and mortality of dengue fever.

S Valarmathi,S Parajulee(2013) A cross sectional study was conducted at the College of Medical Sciences-Teaching Hospital, Nepal among the nurses during December, 2010. the study members 89% were from Proficiency Certificate level (PCL) background and the mean (IQR) age of the respondents was 21 years (20-22.75). Overall score of the nurses was 11 (9-13) with a maximum possible score of 17. There were no association between the respondents knowledge scores with age (p=0.14); educational qualifications (p=0.86); duration of experience (p=0.59); ward (p=0.28). The study findings report a low knowledge among the nursing practitioners on dengue fever and its complications and their knowledge did not have any association with their demographic variables

Dana Todd(2010) A cross-sectional Knowledge, attitudes and practices regarding dengue infection in Westmoreland, Jamaica. More than half of the parents (54%) had good knowledge about signs, symptoms, and modes of transmission of dengue. Approximately 47% considered dengue to be a serious but preventable disease to which they are vulnerable. Nevertheless, a majority (77%) did not use effective dengue preventive methods such as screening of homes and 51% did not use bed nets. Educational attainment (OR, 2.98; CI, 1.23–7.23) was positively associated with knowledge of dengue. There was no correlation between knowledge about dengue and preventive practices (p=0.34). Radio and TV were the predominant sources of information about dengue fever. Our findings suggest that the good knowledge about dengue fever among residents of Westmoreland did not translate to adoption of preventive measures. Health program planners and practitioners need to identify and facilitate removal of barriers to behavior change related to control of dengue fever among the population.

Faisal Shuaib(2010) A cross-sectional questionnaire survey of 192 parents attending child health clinics in the Parish of Westmoreland was conducted. More than half of the parents (54%) had good knowledge about signs, symptoms, and modes of transmission of dengue. Approximately 47% considered dengue to be a serious but preventable disease to which they are vulnerable. Nevertheless, a majority (77%) did not use effective dengue preventive methods such as screening of homes and 51% did not use bed nets. Educational attainment (OR, 2.98; CI, 1.23–7.23) was positively associated with knowledge of dengue. There was no correlation between knowledge about dengue and preventive practices (p=0.34). Radio and TV were the predominant sources of information about dengue fever. Our findings suggest that the good knowledge about dengue fever among residents of Westmoreland did not translate to adoption of preventive measures.

Nahla Khamis RagabIbrahim (2009) A cross-sectional approach was conducted to assess knowledge, attitudes and practice (KAP) of high school female students, teachers and supervisors towards Dengue fever (DF), and to determine scoring predictors of high school students' knowledge and practice scores. A multistage, stratified, random sample method was applied. A total of 2693 students, 356 teachers and 115 supervisors completed confidential self-administered questionnaires. Students obtained the lowest mean knowledge score compared to the other two groups ($F = 51.5$, $P < 0.001$). A positive family history of DF (a OR = 2.05; 95% CI = 1.15–3.64), having literate mothers (≥secondary education), and students' age ≥17 were the predictors of high students' knowledge score. The only predictor of high practice score was obtaining high knowledge score (a OR = 2.06; 95% CI = 1.73–2.44).

Ahmed Itrat,(2008) A cross-sectional pilot study was conducted among people visiting tertiary care hospitals in Karachi. Through convenience sampling, a pre-tested and structured questionnaire was administered through a face-to-face unprompted interview with 447 visitors. About 89.9% of individuals interviewed had heard of dengue fever. Sufficient knowledge about dengue was found to be in 38.5% of the sample, with 66% of these in Aga Khan University Hospital and 33% in Civil Hospital Karachi. Literate individuals were relatively more well-informed about dengue fever as compared to the illiterate people ($p<0.001$). Knowledge based upon preventive measures was found to be predominantly focused towards prevention of mosquito bites (78.3%) rather than eradication of mosquito population (17.3%). Use of anti- mosquito spray was the most prevalent (48.1%) preventive measure. Television was considered as the most important and useful source of information on the disease.

CHAPTER – III

RESEARCH METHODOLOGY

Systematic investigation to establish facts or principles or to collect the information on a subject.To carry out investigation in to (a subject, or problem etc).The research approach adopted for this study in quantitative approach. Quantitative approach manipulative and evaluative approach. **(Sassaroli, 2005)**

RESEARCH DESIGN

Research design can be defined as an overall plan or blue print the researchers select to cases out their study. **(Polit and Beck, 2007)**

Design used in the study was **Pre experimental one group pre test and post test design** will be selected to evaluate the effectiveness of computer assisted teaching programme on management of dengue hemorrhagic fever among staff nurses.

Table:1 Diagrammatic representation of research design

Staff Nurses	Pre test	Intervention	Post test
	O_1	X	O_2

The symbols are

O_1 -Pre test on knowledge and attitude among staff nurses.

X –**Computer assisted teaching**

O_2 -Post test on knowledge and attitude among staff nurses.

VARIBLES

Variables are qualities properties or characteristics of person,things or situation that change or vary

Independent Variables

It is a stimulus or activity that is manipulated or varied by the research to create the effect on the dependent variables.

The independent variables in the present study was **Computer assisted teaching programme** on management of dengue hemorrhagic fever.

Dependent variables

Dependent variables is often referred to as the consequence or the presumed effect that varies with a change in the independent variable, **(Basavanthappa.B.T, 2007).**

The dependent variables in the present study was **Knowledge and Attitude** among staff nurses.

SETTING OF THE STUDY

Research setting are specific places in a research where data collection is to be made. The selection of setting was done on the basis of feasibility of conducting the study, availability, of subjects and permission authorities. **(Polit and Hungher, 2004)**

Setting is physical location and condition in which data collection takes place in this study.

This study will be conducted in a HUDA TRUST, KERALA.

POPULATION

Population refers to the entire set of individual or object having some common characteristics. **Munrol(2008)**

The population of this study will be staff nurses in **Huda trust hospital, Kerala.**

Target population

The target population is the aggregate of cases about which the researcher would like to make generalization.

The target population for this study were staff nurses working in Huda trust hospital, Kerala.**(Suresh K Sharma, 2004)**

Accessible population

Accessible population is the aggregate of cases that conform to the designed criteria and that are accessible as a pool of subject for a study. **(Sai Panish, 1999)**

The accessible population for this study were staff nurses working in Huda trust hospital, who meets the inclusion criteria.

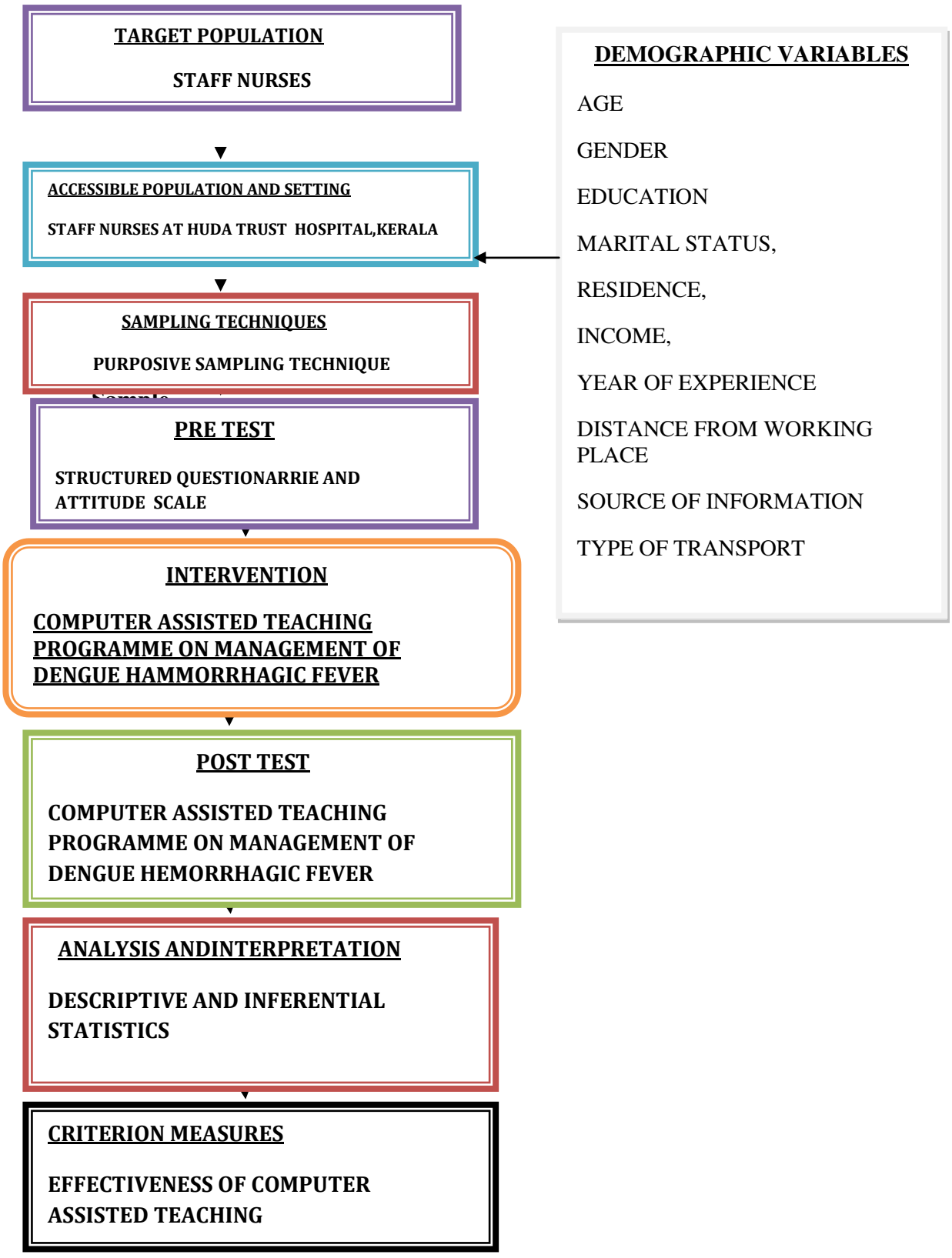

Fig.3.2 SCHEMATIC REPRESENTATION OF RESEARCH METHODOLOGY

A sample is a subset of population selection to participate in a research study. It is a portion of population which represent the entire population. **(Polit and Beck, 2004)**

The samples selected for the present study were the staff nurses at Huda trust hospital, who were willing to participate and present during the period of data collection.

SAMPLING

Sampling is the process of selecting representative units of a population for study in a research. It is the process of selecting a subset of a population in order to obtain information regarding a phenomenon in a way that represents the entire population. **(Basavanthappa, 2007)**

SAMPLE SIZE

Number of subjects, event, behaviour, or situations that are examined in a study.**(Suresh K Sharma, 2014)**

In this study the **sample size will be 60.**

SAMPLING TECHNIQUES

Sampling techniques refers to the process of selecting the population to represent the entire population. **(Pilot and Beck, 2004)**

The sample for the present study will be selected using **Purposive sampling Technique.**

SAMPLING CRITERIA

Inclusion Criteria

- Staff nurse who are willing to participate in the study
- Staff nurse who are registered in nurse and midwife.
- Available at the time of data collection.

Exclusion Criteria

- Staff nurse who are not registered nurse and midwife.
- Staff nurse who are absent at the time of data collection
- Not co-operating with researcher.

INSTRUMENTS AND TOOLS OF DATA COLLECTION

Development of the tool

The tool acts as a instrument to assess and collect the data from the respondent of the study. **(Pilot and Beck, 2009)**

The tool was prepared based on review of literature. It was rechecked by the experts in the field of medical, dengue, communicable ward.

Instruments intended to be used

- Structured dengue hemorrhagic fever questionnaire for staff nurse
- Demographical variables.

DESCRIPTION OF TOOL

There are 3 sections of tools were used. They are

Section A

It consists of demographic characteristics of nine items which were used to collect the sample characteristics. The characteristics included were age, sex, marital status, type of the family, professional education, years of experience, income, distance from hospital, source of information.

Section B

This consists of structured questionnaire of 30 questions. The items were developed to cover the following groups

- Knowledge regarding dengue hemorrhagic fever
- Knowledge regarding cause and risk factor of dengue hemorrhagic fever
- Knowledge regarding signs and symptom of dengue hemorrhagic fever
- Knowledge regarding complication of dengue hemorrhagic fever
- Knowledge regarding management of dengue hemorrhagic fever

Each multiple choice had options with one correct response. Each item had a score of one for the correct answer and zero for the wrong answer. The maximum score was 30.

Table :2 Scoring procedure for Knowledge level

Category	Range of marks
Below average	0-5
Average	6-10
Good	11-15
Very good	16-20
Excellent	21-25

Section C

It consists of Attitude scale regarding management of dengue hemorrhagic fever which consists of 16 self reporting statements, and the answers to these are used to determine a staff nurses attitude level. Each statement in the attitude scale is rated on a five-point scale Strongly agree-4,agree-3,uncertain-2,disagree-1.strongly disagree-0)

Scoring procedure

Attitude scale consists of 8 positive statements and 8 negative statements

Positive statements are 1,2,3,4,114,15,16.

Negative statements are 5,6,7,8,9,10,11,12,.

For the purpose of scoring and interpretation negative statement reverse score was used.

The overall score for attitude scale ranges from a minimum of 25% to a maximum of 100%.

Table : 3 Scoring procedure for level of Attitude

Category	**Range of scores**
Poor	0-16
Average	17-32
Good	33-48
Very good	49-64

VALIDITY OF THE TOOL:

Validity refers to the degree to which an instrument measures, what it is supposed to measure. To determine the content validity, It's refers to the adequacy of the sampling of the domain being studied. **(Suresh K. Sharma, 2007)**

The content validity of the demographic variable,structured questions, attitude scale validated in consultation with the guide and field experts are (doctors, statistician and, nurse specialist. The tool was modified according to the suggestions and recommendations of the experts.

RELIABILITY OF THE TOOL

Reliability of an instrument is the degree of consistency with which it measures the attribute it is supposed to be measuring.**(Polit and Hungler,2000)**

Reliability of the tool was tested by Split-half method. The structured questionnaire was administered to staff nurse by testing the stability.It was done by test and re-test method.The value was found to be r= 0.88. so the interview questionnaire was found to be reliable. The reliability of the observational check list done by adopting inter rated method,the value was found to be r=0.85 so the observational check list was found to be reliable.

PILOT STUDY

Pilot study is a trial study carried out before a research design is finalized to assist in defining the research question or to test the feasibility, reliability, and validity of the proposed study design. **(Suresh K Sharma, 2014)**

A pilot study is a smallest version of a proposed study conducted to refine the methodology.

The purpose of the study was to find out the feasibility of the study, clarity of language in the tools and to finalize the plan for analysis. It is developed similar to the proposed study, using similar subjects, the same setting, same data collection and analysis techniques.

The pilot study was conducted from **Huda Trust** hospital, Kerala. The purpose of study was explained to the staff nurse. After getting the written consent

from staff nurse the researcher conducted pilot study.The researcher collected demographic data of staff nurse and assess the pre test knowledge and attitude by using structured questionnaire and check list on management of dengue hemorrhagic fever.On same day computer assisted teaching programme on management of dengue hemorrhagic fever was done.After 8 days post test knowledge and practice was assessed by using structured questionnaire and check list on management of dengue hemorrhagic fever.The results show that the knowledge scores has calculated 't' value 7.6 is higher than the table value 2.57 and attitude score has a calculated "t" value 4.3 is higher than the table value 2.57.It was found effective in increasing the knowledge and practice regarding management of dengue hemorrhagic fever among staff nurses..

DATA COLLECTION PROCEDURE

Data collection is the gathering of information needed to address a research problem. **(Polit and hungler,2011)**

The data collection was done over a period of 4 weeks.The permission was obtained from chairperson of Huda trust hospital.

- **Pre test**

Staff nurses were requested to complete structured questionnaire, attitude scale, before the Computer assisted teaching programme.

- **Implementation of Computer assisted teaching programme.**

Computer assisted teaching programme was given to staff nurses.

- **Post test**

Staff nurses were requested to complete structured questionnaire, attitude scale after intervention.

PLAN FOR DATA ANALYSIS

Data analysis is the systematic organization and synthesis of research data, and the testing of research hypothesis using those data.

The data obtained was analyzed using descriptive and inferential statistics such as paired' t' test to compare the mean pre test and post test over all knowledge, all the department of staff nurse assessed knowledge and attitude score and to find out the correlation between knowledge and attitude by using Karl pearson correlation. Chi square was used to find the association between post test knowledge and attitude score with demographic variables.

DATA COLLECTION METHOD

Prior to data collection permission will be obtained from hospital authority concerned for conducting the study

DATA ANALYSIS PLAN

- To assess the level of knowledge among staff nurses before and after Computer assisted teaching is analyzed by using **frequency and percentage**.
- To find the effectiveness of Computer assisted teaching regarding knowledge and attitude on management of dengue hemorrhagic fever among staff nurses analyzed by **mean and standard deviation, mean percentage and paired' t 'test.**
- To find the co-relation between knowledge and attitude regarding management of dengue hemorrhagic fever analyzed by **Karl pearson's co-relation coefficient test.**
- To find the association between post scores of knowledge and attitude among staff nurses with their demographic variables is analyzed by **Chi-square test.**

CHAPTER – IV

DATA ANALYSIS AND INTERPRETATION

Analysis is a process of organizing the data in such a way that research question can be answered **(Polit and Hungler, 1999)**. Data analysis is a systematic process where the investigation transforms the data collected into numerical form by applying statistical techniques to illustrate, condense, recap and evaluate data. Data interpretation, a critical thinking skill refers to the process of determining and critiquing the significance of the survey results and finding.

This chapter deals with the analysis of data collected pre-experimental study to assess the effectiveness of computer assisted teaching program regarding management of dengue hemorrhagic fever among staff nurses in Huda trust hospital, Kerala.

Descriptive and inferential statistics were used for analysis of data. The collected data were organized as follows:

- To assess the level of knowledge and attitude regarding Management of dengue hemorrhagic fever before and after Computer Assisted teaching
- To determine the co-relation between knowledge and attitude regarding management of dengue hemorrhagic fever among staff nurses.
- To find the effectiveness between post knowledge and attitude regarding Management of dengue hemorrhagic fever among staff nurses with selected demographic variables.

The data analyzed were presented as follows:

Section A: Description of samples according to their demographic variables..

Section B: Assess the level of knowledge and attitude among staff nurses before and after Computer assisted teaching on management of dengue hemorrhagic fever.

- ❖ Frequency and percentage distribution of pre and post scores on knowledge regarding management of dengue hemorrhagic fever among staff nurses.
- ❖ Frequency and percentage distribution of pre and post scores on attitude regarding management of dengue hemorrhagic fever among staff nurses.
- ❖ Paired "t" test value of pre and post score of knowledge and attitude.
- ❖ Mean and standard deviation and mean percentage of pre and post test knowledge and attitude scores on management of dengue hemorrhagic fever among staff nurses.

Section C: The data on co-relation 'r' value of post test knowledge and attitude scores.

Section D: Data on association between the post test scores on level of knowledge and attitude regarding management of dengue hemorrhagic fever among staff nurses with their demographic variables.

SECTION-A: DESCRIPTION OF SAMPLES ACCORDING TO THEIR DEMOGRAPHIC VARIABLES

Table-4.1: Frequency and percentage distribution of demographic variables among staff nurses.

(N = 60)

S. No	DEMOGRAPHIC VARIABLES	STAFF NURSES	
		Frequency (n)	Percentage (%)
1	**AGE IN YEARS**		
	A. 20 -30 years	39	65
	B. 31 -40 years	21	35
	C. >40 years	0	0
2	**GENDER**		
	A. Male	19	31.67
	B. Female	41	68.33
3	**MARITAL STATUS**		
	A. Single	38	63.33
	B. Married	22	36.67
	C. Divorced	0	0
	D. Widowed	0	0
4	**RESIDENCE**		
	A. Own house	21	35
	B. Rented house	19	31.67
	C. Hospital quarters	20	33.33
	D. Paying guest	0	0
5	**TYPE OF FAMILY**		
	A. Nuclear	41	68.33
	B. Joint	19	31.67
	C. Extended	0	0

S. No	DEMOGRAPHIC VARIABLES	STAFF NURSES	
		Frequency (n)	Percentage (%)
6	**PROFESSIONAL EDUCATION**		
	A. ANM	30	50
	B. Diploma in nursing	21	35
	C. Graduate Nursing	9	15
7	**YEARS OF EXPERIENCE**		
	A. Below 5 years	35	58.33
	B. 6-10 years	21	35
	C. 11-15 years	4	0.67
	D.> 15years	0	0
8	**INCOME**		
	A. 6000-8000	35	58.33
	B. 9000-11000	21	35
	C. 12000-14000	4	6.7
	D.>14000	0	0
9	**DISTANCE OF WORK PLACE**		
	A. Within campus	37	61.67
	B. Within 6 kilo meters	20	33.33
	C. More than 6 kilo meters	3	5
10	**SOURCE OF INFORMATION**		
	A. Mass media	5	0.8
	B. Magazine	7	11.67
	C. News paper	20	33.33
	D. T.V	25	41.67
	E. Movie	3	0.5

Table 4.1 reveals that the frequency and percentage distribution of demographic variables of staff nurses.

Regarding **age**, majority of subjects 39 (65%) were in the age group of 20-30 years. 21 (35%) were in the age group of 31-40 years.

On the basis of **gender** out of 60 subjects 19 (31.67%) were Male, 41 (68.33%) was female.

On the basis of **marital status** out of 60 subjects 38 (63.33%) were married, 22 (33.37%) was not married.

On the basis of **residence** out of 60 subjects 21 (35%) were living own house19(31.67%)were living in rented house and 20 (33.37)were living in hospital quarters.

According to their **type of family** out of 60 subjects 41 (68.33%) were nuclear family and 19 (31.67%) joint family.

Regarding **professional education** out of 60 subjects 30(50%) were ANM and 21(35%) were Diploma in nursing 9 (15%)were graduate.

Regarding **Years of experience** out 60 subjects below 5 years experience 35(58.33%),6 to 10 years experience, 21(35%) and 11 to 15 years experience 4(6.7%).

Regarding **Income** of 60 subjects 34 (68%)had 6000-8000, 21 (35%)had 9000-11000 and 4(6.7%) had above 11000.

Regarding **Distance of work place** of 60 subjects with in campus 37(61.67%) were with in 6 kilo meters and 20(31.33%) above 6 kilo meters 3(5%).

Regarding the **source of information** 5(0.8%) were from mass media, 7(11.67%) were from magazine, 20(33%) were from news paper and 25(41.67%) were from TV and movie 3(0.5%).

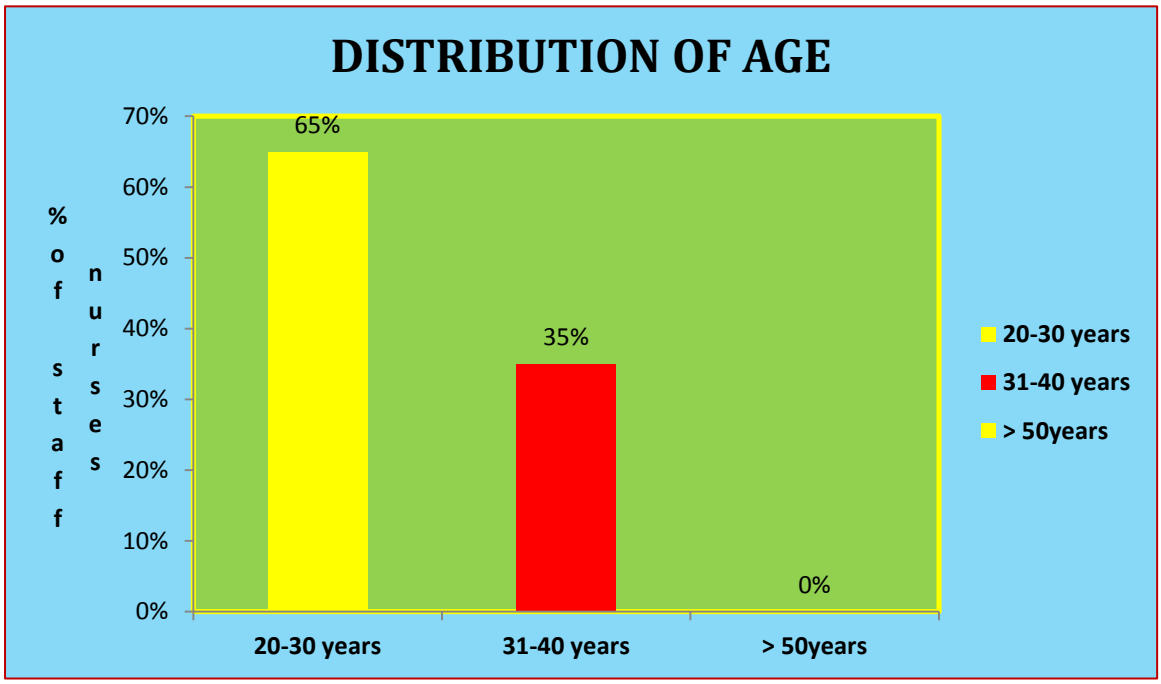

Fig. 4.1: Bar diagram showing Frequency and percentage distribution of staff nurses regarding age

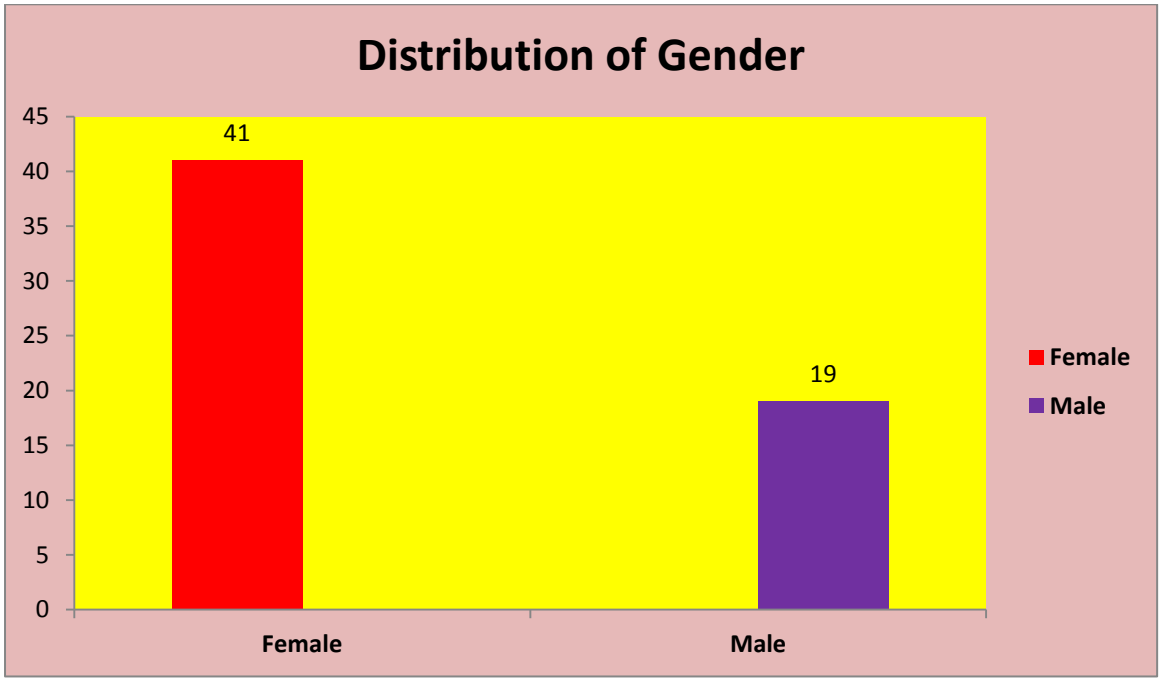

Fig. 4.2: Bar diagram showing Frequency and percentage distribution of staff nurses regarding gender.

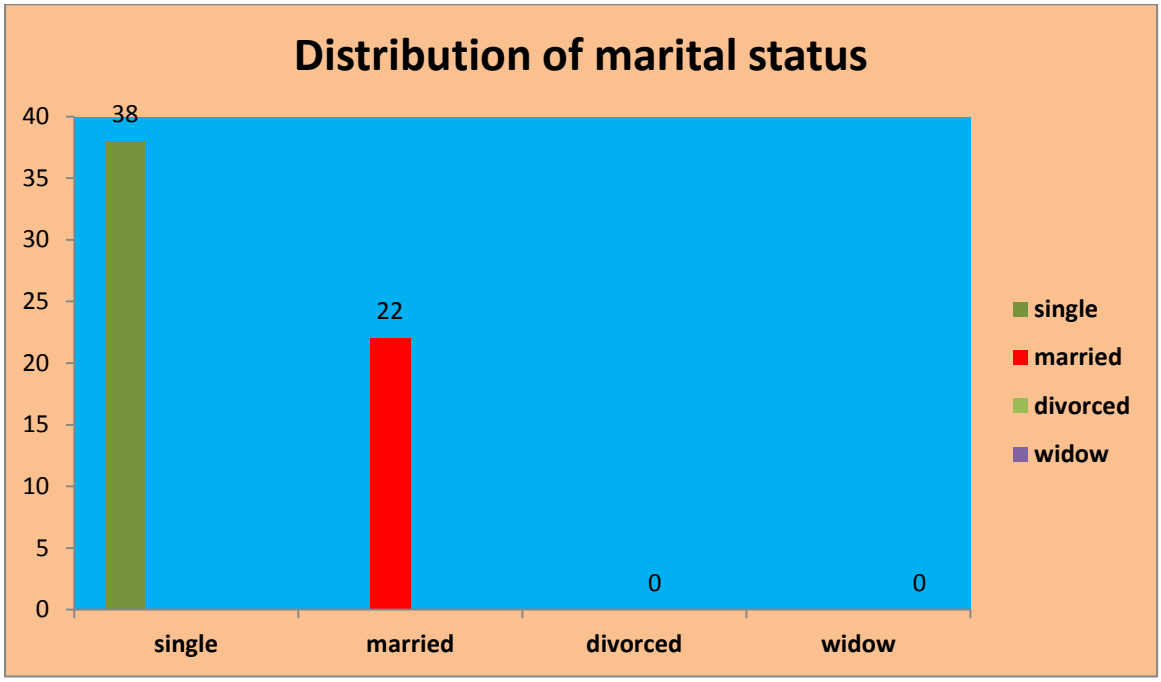

Fig. 4.3: Bar diagram showing Frequency and percentage distribution of staff nurses regarding marital status.

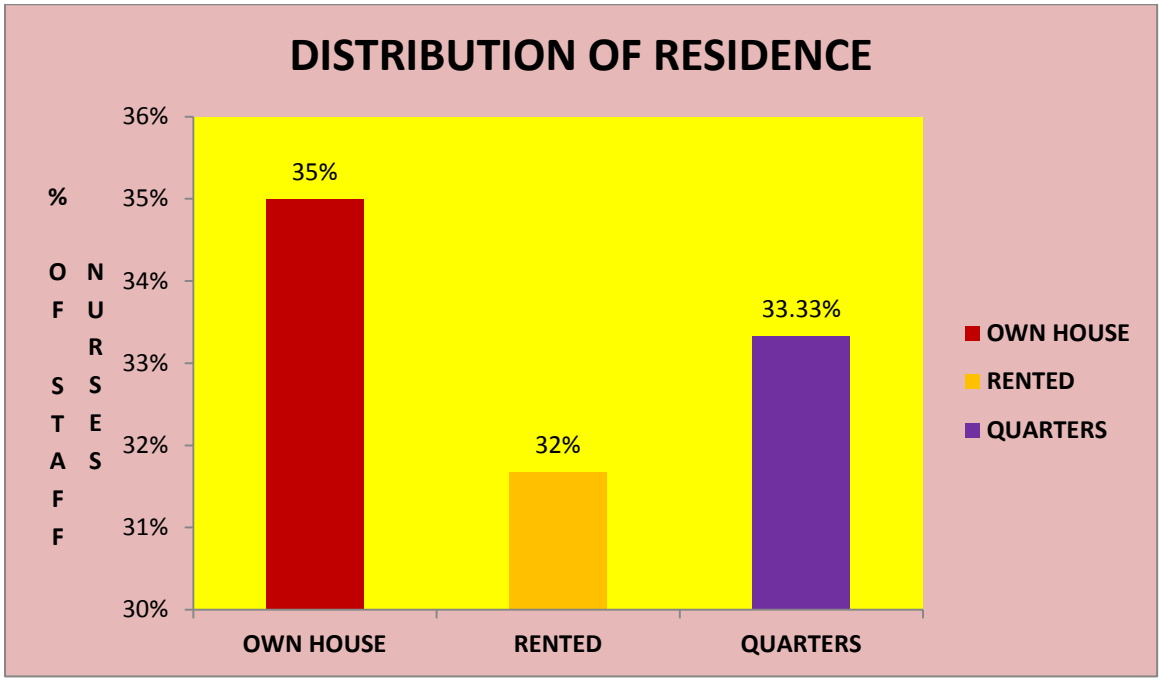

Fig. 4.4: Bar diagram showing Frequency and percentage distribution of staff nurses regarding residence.

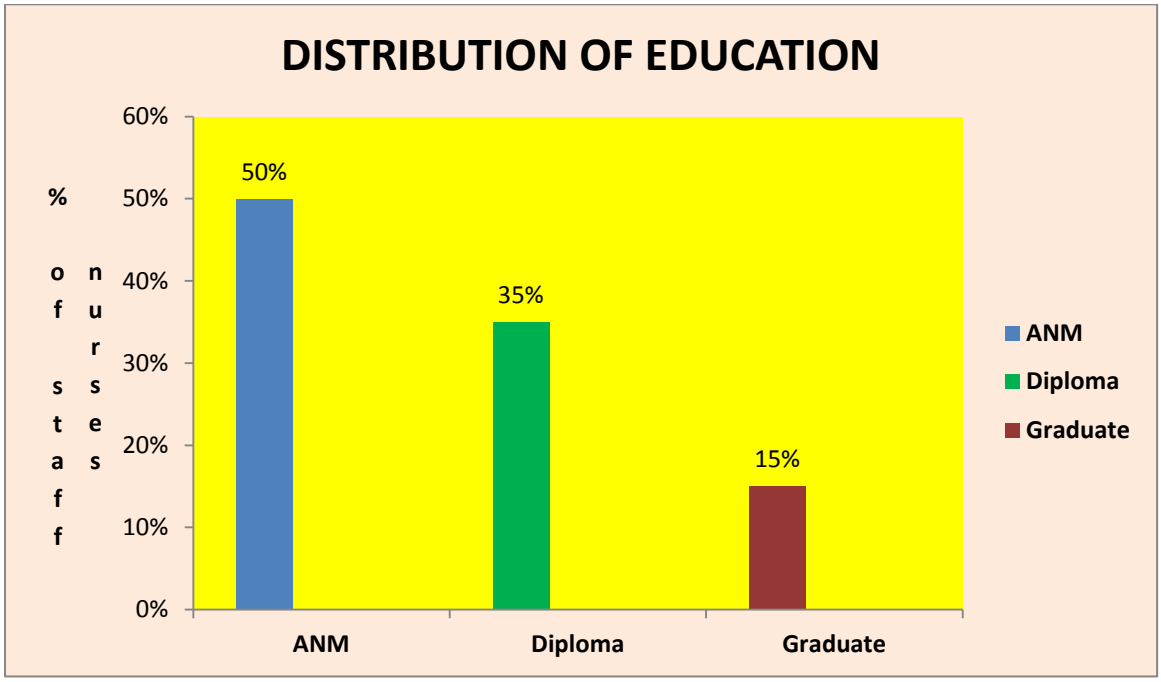

Fig. 4.5 : Bar diagram showing Frequency and percentage distribution of staff nurses regarding their professional education

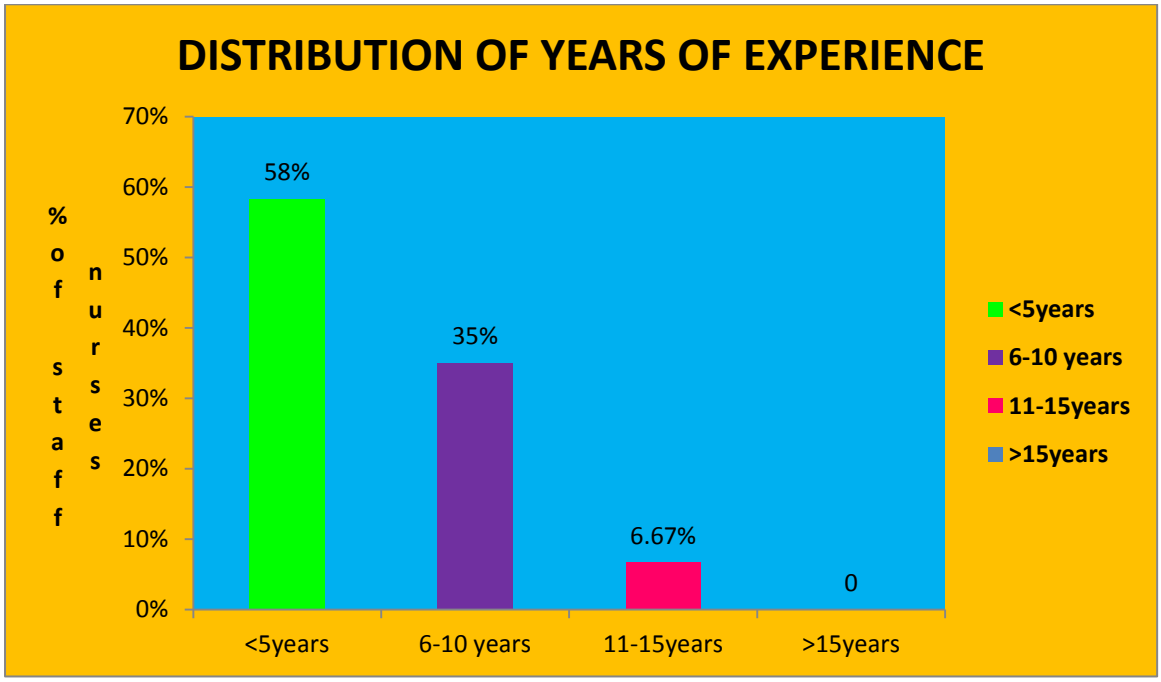

Fig. 4.6: Bar diagram showing Frequency and percentage distribution of staff nurses regarding years of experience.

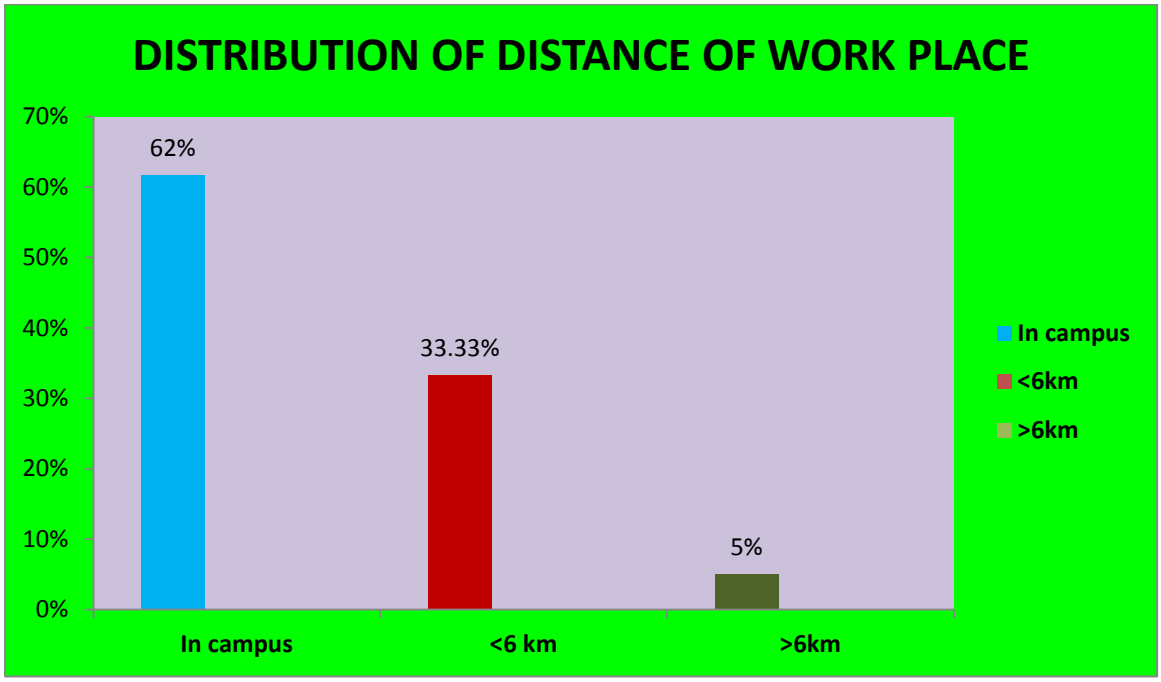

Fig. 4.7: Bar diagram showing Frequency and percentage distribution of staff nurses regarding their distance of work place

SECTION B: ASSESS THE LEVEL OF KNOWLEDGE AND ATTITUDE AMONG STAFF NURSES BEFORE AND AFTER COMPUTER ASSISTED TEACHING ON MANAGEMENT OF DENGUE HEMORRHAGIC FEVER.

Table 4.2 Frequency and percentage distribution of pre and post scores on knowledge regarding management of dengue hemorrhagic fever among staff nurses.

S.NO	LEVEL OF KNOWLEDGE	MARKS	PRE TEST		POST TEST	
			F	%	F	%
1	Below average	0-5	0	0	0	0
2	Average	6-10	15	25	0	0
3	Good	11-15	44	73.33	0	0
4	Very good	16-20	1	1.67	25	41.6
5	Excellent	20-25	0	0	35	58.33
	Total		n=60	100	n=60	100

Frequency and percentage distribution of pre and post scores on knowledge regarding management of dengue hemorrhagic fever among staff nurses in pre test 73.33% of them knew good knowledge and 25% of them average level of knowledge, whereas in post test 58.33% of them knew excellent knowledge and 41.67% of them knew very good knowledge in management of dengue hemorrhagic fever.It seems that computer assisted teaching programme among staff nurses was more effective.

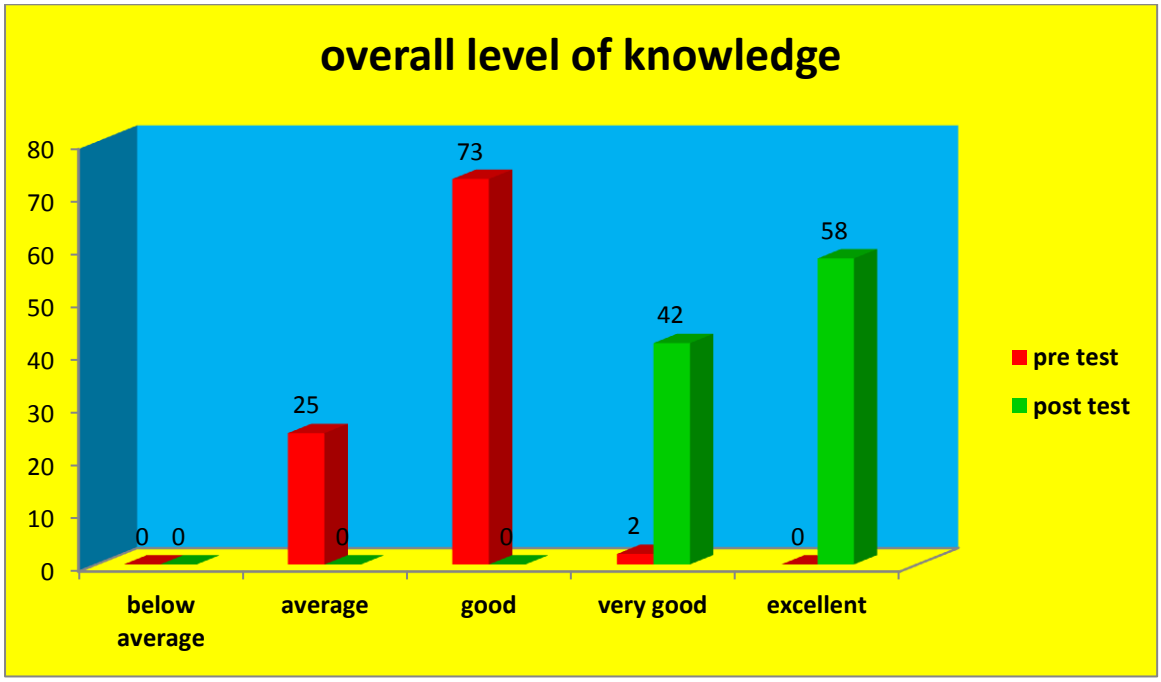

Fig. 4.8: Bar diagram indicates the distribution of staff nurses by pre test and post test over all level of knowledge.

Table 4.3 Frequency and percentage distribution of pre and post scores on attitude regarding management of dengue hemorrhagic fever among staff nurses.

S.NO	LEVEL OF KNOWLEDGE	MARKS	PRE TEST		POST TEST	
			F	%	F	%
1	Poor	0-6	1	1.67	0	0
2	Average	17-32	59	98.33	0	0
3	Good	33-48	0	0	55	91.67
4	Very good	49-64	0	0	5	8.33
			n=60	100	n=60	100

Frequency and percentage distribution of post test attitude scores level of staff nurses in pre test 98.33% of them got average level of attitude whereas in post 91.67% of them very good level of attitude.

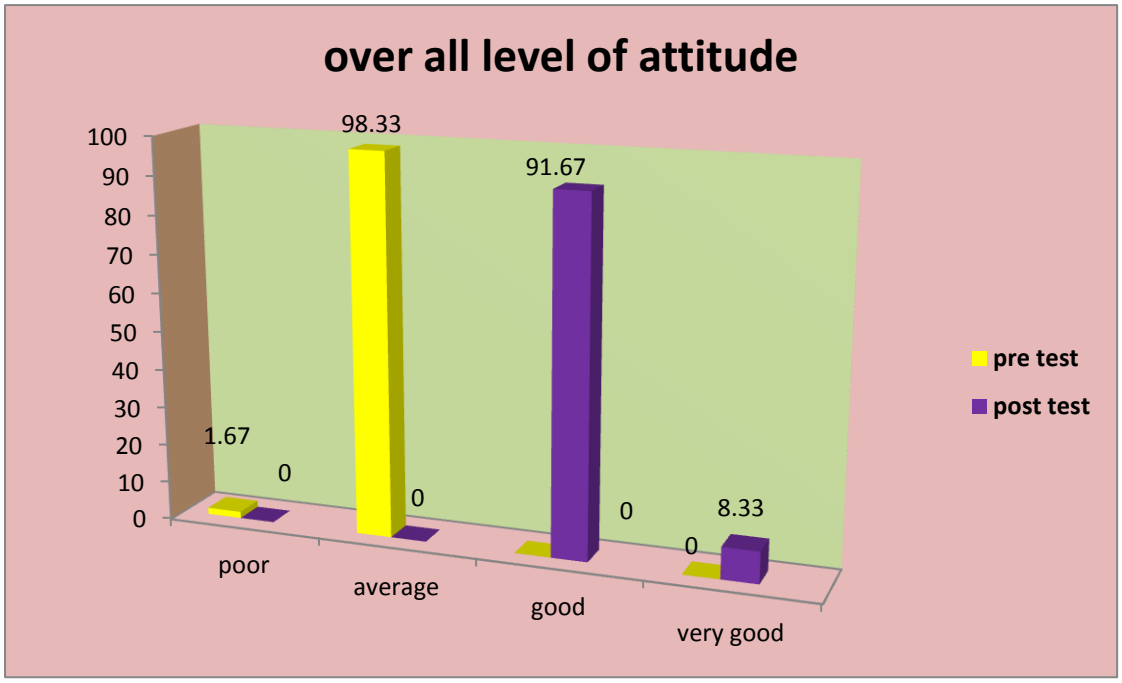

Fig. 4.9: Bar diagram indicates the distribution of staff nurses by pre test and post test over all level of attitude

Table. 4.4 Paired " t" test value of pre and post test scores of staff nurses.

S no	LEVELS	Paired 't ' test value	Table value	Level of significance	Degree of freedom
1	**Knowledge**	26.1	2.001	P<0.005 significant	DF=59
2	**Attitude**	31.65	2.001	P<0.005 significant	DF=59

Paired 't' test was calculated to analyze the effectiveness between pre and post scores of knowledge and attitude regarding management of dengue hemorrhagic fever among staff nurses. The paired 't' test value in knowledge and attitude was 21.1 and 31.65 respectively when compared to table value (2.001) both are high. This shows that there is a significant effectiveness between pre and post scores of level of knowledge and attitude among staff nurses, It seems that computer assisted teaching on management of dengue hemorrhagic fever among staff nurses was more effective.

Table 4.5 Mean, standard deviation and mean percentage of staff nurses pre and post scores of knowledge and attitude.

Knowledge and Attitude	Max marks	Pre test			Post test			Difference in Mean
		Mean	SD	Mean %	Mean	SD	Mean %	
Management of dengue hemorrhagic fever	25	11.58	1.22	46	21.2	1.68	85	39
Attitude	64	24.31	3.51	38	43.26	3.54	68	30

In knowledge questions pre test score 11.58 (46%)and the post test score 21.2(85%) The mean difference percentage is 34%.In attitude pre test score 24.31 (38%) and post test score 43.26(68%) and the mean difference is 30%.It seems that computer assisted teaching was effective among staff nurses to improve the knowledge and attitude regarding management of dengue hemorrhagic fever.

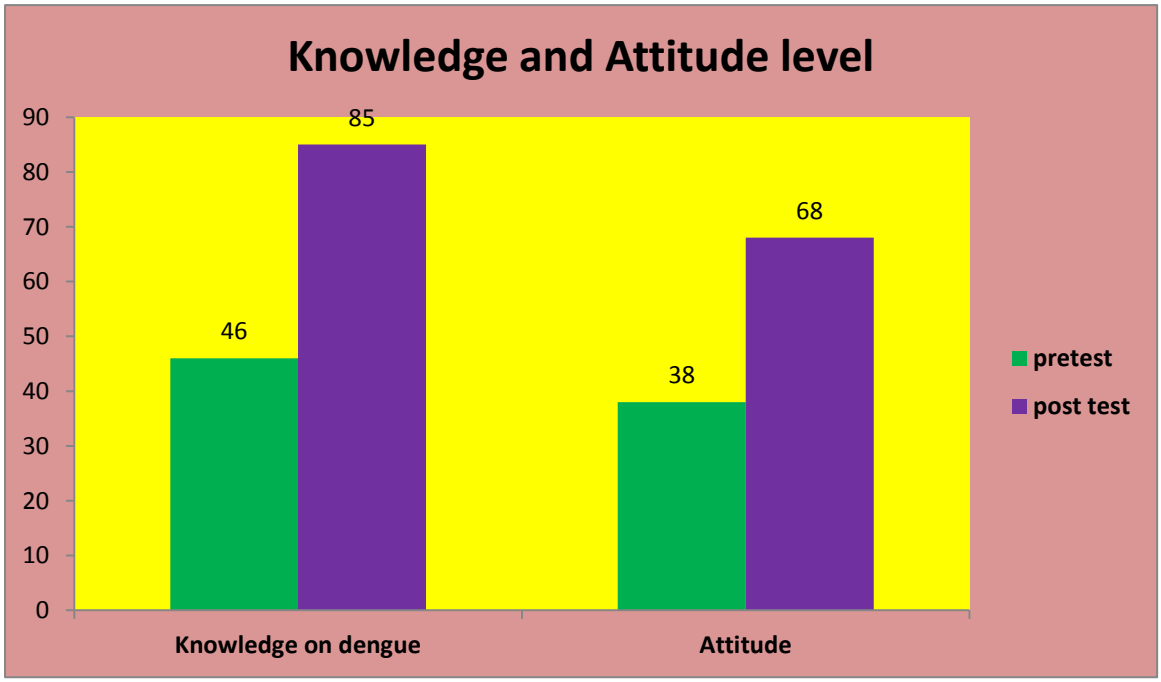

Fig 4.10 Bar diagram showing mean percentage distribution of staff nurses pre and post test scores of knowledge and attitude.

SECTION C: DATA ON CO-RELATION ' R' VALUE OF THE POST TEST KNOWLEDGE AND ATTITUDE SCORES.

Knowledge post test score(X^2)	**Attitude post test score(Y^2)**	**XY**	**r value**	**T value**
167	728	121	0.643	P>0.005

The 'r' Value for post test knowledge and attitude is 0.643.The obtained 'r' value is more than the table value 't' (58)=0.254 it shows that there is co-relation between the post test knowledge and attitude regarding management of dengue hemorrhagic fever..In this research hypothesis is accepted.It is interpreted that the knowledge and practice regarding management of dengue hemorrhagic fever are dependent to each other.

SECTION D: FIND OUT THE ASSOCIATION BETWEEN POST TEST SCORES OF KNOWLEDGE AND ATTITUDE AMONG STAFF NURSES WITH THEIR DEMOGRAPHIC VARIABLES.

Table 4.9 Chi-square value of association between the post test scores of knowledge among staff nurses with their demographic variables.

S. No	DEMOGRAPHIC VARIABLES	STAFF NURSES			
		Frequency(n)	Mean		Significant
			<mean	>mean	
1	**AGE IN YEARS**				$\chi^{2=}$1.18
	A. 20 -30 years	39	20	19	DF=1
	B. 31 -40 years	21	7	14	P>0.05
	C. >40 years	0	0	0	NS
2	**GENDER**				$\chi^{2=}$0.313
	A. Male	19	9	10	DF=1
	B. Female	41	17	24	P>0.05
					NS
3.	**MARITAL STATUS**				$\chi^{2=}$4.43
	A. Single	38	21	17	DF=1
	B. Married	22	10	12	P>0.05
	C. Divorced	0	0	0	NS
	D. Widowed	0	0	0	
4.	**RESIDENCE**				$\chi^{2=}$0.314
	A. Own house	21	10	11	DF=2
	B. Rented house	19	7	12	P>0.05
	C. Hospital quarters	20	10	10	NS
	D. Paying guest	0	0	0	
5.	**TYPE OF FAMILY**				$\chi^{2=}$0.66
	A. Nuclear	41	18	23	DF=1
	B. Joint	19	7	12	P>0.05
	C. Extended	0	0	0	NS

S. No	DEMOGRAPHIC VARIABLES	STAFF NURSES			
		Frequency(n)	Mean		Significant
			<mean	>mean	
6.	**PROFESSIONAL EDUCATION**				$\chi^{2=}$11.03 DF=2 P>0.05 S
	A. ANM	30	13	17	
	B. Diploma in nursing	21	10	11	
	C. Graduate Nursing	9	2	7	
7.	**YEARS OF EXPERIENCE**				$\chi^{2=}$2.6 DF=2 P>0.05 NS
	A. Below 5 years	35	13	22	
	B. 6-10 years	21	10	11	
	C. 11-15 years	4	2	2	
	D.> 15years	0	0	0	
8.	**INCOME**				$\chi^{2=}$2.65 DF=2 P>0.05 NS
	A. 6000-8000	35	13	22	
	B. 9000-11000	21	10	11	
	C. 12000-14000	4	2	2	
	D.>14000	0	0	0	
9.	**DISTANCE OF WORK PLACE**				$\chi^{2=}$1.78 DF=2 P>0.05 NS
	A. Within campus	37	18	19	
	B. Within 6 kilo meters	20	7	13	
	C. More than 6 kilo meters	3	2	1	
10.	**SOURCE OF INFORMATION**				
	A. Mass media	5	3	2	$\chi^{2=}$3.248 DF=4 P>0.05 NS
	B. Magazine	7	2	5	
	C. News paper	20	9	11	
	D. T.V	25	9	16	
	E. Movie	3	2	1	

Table 4.9 Chi- square was calculated to find out the association between post test knowledge scores of staff nurses with their demographic variables (Age, gender, marital status, residence, professional education, type of family, type of transport, distance from hospital, source of information) It reveals that there was significant association found only in educational status, whereas no significant association found between post test scores when compared to other demographic variables such as age, gender, marital status, residence, type of family, years of experience, distance from hospital, type of transport, source of information.

Table 4.10 Chi-square value of association between the post test scores of Attitude among staff nurses with their demographic variables.

S. No	DEMOGRAPHIC VARIABLES	STAFF NURSES			
		Frequency (n)	Mean		Significant
			<mean	>mean	
1	**AGE IN YEARS**				$\chi^{2=}$3.04
	A. 20 -30 years	39	19	20	DF=1
	B. 31 -40 years	21	12	9	P>0.05
	C. >40 years	0	0	0	NS
2	**GENDER**				$\chi^{2=}$0.3
	A. Male	19	9	10	DF=1
	B. Female	41	22	19	P>0.05
					NS
	MARITAL STATUS				$\chi^{2=}$0.93
	A. Single	38	21	17	DF=1
	B. Married	22	10	12	P>0.05
	C. Divorced	0	0	0	NS
	D. Widowed	0	0	0	
3	**RESIDENCE**				$\chi^{2=}$2.68
	A. Own house	21	10	11	DF=1
	B. Rented house	19	7	12	P>0.05
	C. Hospital quarters	20	10	10	NS
	D. Paying guest	0	0	0	
4	**TYPE OF FAMILY**				$\chi^{2=}$0.307
	A. Nuclear	41	18	23	DF=1
	B. Joint	19	7	12	P>0.05
	C. Extended	0	0	0	NS

5	**PROFESSIONAL EDUCATION**				$\chi^{2=}0.5$ DF=2 P>0.05 NS
	A. ANM	30	13	17	
	B. Diploma in nursing	21	10	11	
	C. Graduate Nursing	9	2	7	
6	**YEARS OF EXPERIENCE**				$\chi^{2=}1.10$ DF=2 P>0.05 NS
	A. Below 5 years	35	13	22	
	B. 6-10 years	21	10	11	
	C. 11-15 years	4	2	2	
	D.> 15years	0	0	0	
7	**INCOME**				$\chi^{2=}0.65$ DF=1 P>0.05 NS
	A. 6000-8000	35	13	22	
	B. 9000-11000	21	10	11	
	C. 12000-14000	4	2	2	
	D.>14000	0	0	0	
8	**DISTANCE OF WORK PLACE**				$\chi^{2=}2.6$ DF=2 P>0.05 NS
	A. Within campus	37	18	19	
	B. Within 6 kilo meters	20	7	13	
	C. More than 6 kilo meters	3	2	1	
9	**SOURCE OF INFORMATION**				
	A. Mass media	5	3	2	$\chi^{2=}3.57$ DF=4 P>0.05 NS
	B. Magazine	7	2	5	
	C. News paper	20	9	11	
	D. T.V	25	9	16	
	E. Movie	3	2	1	

Table 4.10 Chi- square was calculated to find out the association between post test attitude scores of staff nurses with their demographic variables (Age, gender, marital status, residence, professional education, type of family, type of transport, distance from hospital, source of information) It reveals that there was no significant association found between post test scores when compared to their demographic variables such as age, gender, marital status, residence, type of family, professional education, years of experience, distance from hospital, type of transport, source of information.

CHAPTER – V

DISCUSSION

This data deals with the discussion based on the findings obtained from the statistical analysis and its relation to the objectives of the study, the conceptual frame work and the related literature.

This study was done to A study to assess the Effectiveness of Computer Assisted teaching on Knowledge and Attitude regarding Management of Dengue Hemorrhagic Fever among Staff Nurses in Huda trust Hospital, Kerala.

Data collection and analysis were carried out based on the objectives of the study.

OBJECTIVES

- To assess the level of knowledge and attitude regarding Management of dengue hemorrhagic fever before and after Computer Assisted teaching
- To determine the co-relation between knowledge and attitude regarding management of dengue hemorrhagic fever among staff nurses.
- To find the effectiveness between post knowledge and attitude regarding Management of dengue hemorrhagic fever among staff nurses with selected demographic variables.

Objective 1: To assess the level of knowledge and attitude regarding Management of dengue hemorrhagic fever before and after Computer Assisted teaching

(a) Frequency and percentage distribution of staff nurse in selected area regarding their demographic factors.

- Regarding **age**, majority of subjects 39 (65%) were in the age group of 20-30 years. 21 (35%) were in the age group of 31-40 years.

- On the basis of **gender** out of 60 subjects 19 (31.67%) were Male, 41 (68.33%) was female.

- On the basis of **marital status** out of 60 subjects 38 (63.33%) were married, 22 (33.37%) was not married.

- On the basis of **residence** out of 60 subjects 21 (35%) were living own house 19(31.67%)were living in rented house and 20 (33.37)were living in hospital quarters.

- According to their **type of family** out of 60 subjects 41 (68.33%) were nuclear family and 19 (31.67%) joint family.

- Regarding **professional education** out of 60 subjects 30(50%) were ANM and 21(35%) were Diploma in nursing 9 (15%)were graduate.

- Regarding **Years of experience** out 60 subjects below 5 years experience 35(58.33%),6 to 10 years experience, 21(35%) and 11 to 15 years experience 4(6.7%).

- Regarding **Income** of 60 subjects 34 (68%)had 6000-8000, 21 (35%)had 9000-11000 and 4(6.7%) had above 11000.

- Regarding **Distance of work place** of 60 subjects with in campus 37(61.67%) were with in 6 kilo meters and 20(31.33%) above 6 kilo meters 3(5%).

- Regarding the **source of information** 5(0.8%) were from mass media, 7(11.67%) were from magazine, 20(33%) were from news paper and 25(41.67%) were from TV and movie 3(0.5%).

Section A: Data on pre test and post test scores on level of knowledge and attitude regarding management of dengue hemorrhagic fever among staff nurses in selected hospital.

(a) Frequency and percentage of pre test and post test scores on levels of knowledge and attitude regarding management of dengue hemorrhagic fever among staff nurses

- Pre test 73.33% of them knew good knowledge and 25% of them average level of knowledge.

- Post test 58.33% of them knew excellent knowledge and 41.67% of them knew very good knowledge in management of dengue hemorrhagic fever.

- Frequency and percentage distribution of post test attitude scores level of staff nurses in pre test 98.33% of them got average level of attitude whereas in post 91.67% of them very good level of attitude.

(b) Mean, standard deviation (SD) and "t" value on pre test and post test scores on level of knowledge and attitude regarding management of dengue hemorrhagic fever among staff nurses

- In knowledge questions pre test score 11.58 (46%)and the post test score 21.2(85%) The mean difference percentage is 34%.In attitude pre test score 24.31 (38%) and post test score 43.26(68%) and the mean difference is 30%.It seems that computer assisted teaching was effective among staff nurses to improve the knowledge and attitude regarding management of dengue hemorrhagic fever.

- Paired 't' test was calculated to analyze the effectiveness between pre and post scores of knowledge and attitude regarding management of dengue hemorrhagic fever among staff nurses. The paired' t' test value in knowledge and attitude was 21.1and 31.65 respectively when compared to table value (2.001) both are high.

Objectives 2: To determine the co-relation between knowledge and attitude regarding management of dengue hemorrhagic fever among staff nurses.

- The 'r' Value for post test knowledge and attitude is 0.643.The obtained 'r' value is more than the table value 't' (58)=0.254 it shows that there is co-relation between the post test knowledge and attitude regarding management of dengue hemorrhagic fever. In this research hypothesis is accepted. It is interpreted that the knowledge and attitude regarding management of dengue hemorrhagic fever are dependent to each other.

Objective 3: To find the effectiveness between post test knowledge and attitude regarding Management of dengue hemorrhagic fever among staff nurses with selected demographic variables.

- Frequency, percentage, chi square and P value regarding association between post test scores on level of knowledge and attitude regarding Management of dengue hemorrhagic fever among staff nurses with selected demographic variables.

- Chi square value and P value regarding association between post test scores on level of knowledge regarding Management of dengue hemorrhagic fever among staff nurses with selected demographic variable such as age 1.18 (P = 0.05);gender 0.313(P = 0.05);, marital status 4.43 (P = 0.05); residence 0.314 (P = 0.05); type of family 0.66 (P = 0.05); year of experience 2.6 (P = 0.05) income 2.65 (P = 0.05); professional education 11.1 (P = 12.59); income 2.65 (P = 0.05) distance of work 1.78 (P = 0.05); source of information3.248 (P = 0.05); There was significant association found only in educational status, whereas no significant association found between the post test scores when compared to other demographic variables such as age, gender, marital status, residence, type of family, income, year of experience, type of transport, distance from hospital and sources of health information.

- Chi square value and P value regarding association between post test scores on level of attitude regarding Management of dengue hemorrhagic fever among staff nurses with selected demographic variable such as age 3.04 (P = 0.05);gender 0.3(P = 0.05);, marital status 0.93 (P = 0.05); residence 2.68

(P = 0.05); type of family 0.307(P = 0.05); year of experience 1.10 (P = 0.05) income 0.65 (P = 0.05); professional education 0.5 (P = 0.05); income 2.65 (P = 0.05) distance of work 2.6 (P = 0.05); source of information3.57 (P = 0.05); There was no significant association found between the post test attitude scores when compared to other demographic variables such as age, gender, marital status, residence, professional education, type of family, income, year of experience, type of transport, distance from hospital and sources of health information.

CHAPTER – VI

SUMMARY, CONCLUSION, IMPLICATIONS AND RECOMMENDATIONS

The essence of any research project is based on study findings, limitations, interpretation of the result and recommendations that in-corporate the study implications. It also gives meaning to the results obtained in this study.

SUMMARY

The prime aim of the **study was to evaluate the Effectiveness of Computer Assisted teaching on Knowledge and attitude regarding Management of dengue hemorrhagic fever among staff nurses in HUDA trust Hospital, Kerala.**

The objectives of the study were,

- To assess the level of knowledge and attitude regarding Management of dengue hemorrhagic fever before and after Computer Assisted teaching
- To determine the co-relation between knowledge and attitude regarding management of dengue hemorrhagic fever among staff nurses.
- To find the effectiveness between post knowledge and attitude regarding Management of dengue hemorrhagic fever among staff nurses with selected demographic variables.

The study attempted to examine the following research hypothesis:

H_1 : There will be a significant difference between pre test and post test knowledge and attitude regarding management of dengue hemorrhagic fever among staff nurses.

H_2 : There will be a significant co-relation between knowledge and attitude scores regarding management of dengue hemorrhagic fever among staff nurses.

H_3 : There will be a significant association between post test knowledge and attitude scores regarding management of dengue hemorrhagic fever among staff nurses after computer assisted teaching.

The review of literature enabled the investigator to develop conceptual framework, tool and methodology for the study. Literature review was done as follows:

(1) Studies related to incidence and prevalence of Dengue Hemorrhagic fever,

(2) Signs and symptoms and management of Dengue Hemorrhagic fever**,**

(3) Knowledge and attitude of Dengue Hemorrhagic fever

The conceptual framework adopted for the present study was based on **LUDWING VAN BERTALANFFY GENERAL SYSTEM THEORY (1996)**. This model helped the investigator to assess the Computer Assisted teaching on Knowledge and Attitude regarding Management of dengue hemorrhagic fever among Staff Nurses in selected Hospital,.

The present study was **Pre-experimental, one group pre-test and post-test group design.** Independent variable in this study is knowledge and attitude regarding dengue hemorrhagic fever and dependent variable is computer teaching, and associate variable for this study were socio-demographic.

The tool developed and reused for the data collection was on knowledge based structured questionnaire. A multiple choice questionnaire was used regarding management of dengue hemorrhagic fever. The content validity of the tool was established by 5 experts. The reliability of the tool for knowledge (r=0.93). The tool was found to be reliable.

The pilot study was conducted staff nurse in selected hospital at Kerala, the study was found to be feasible.

The main study was conducted Huda trust hospital, Kerala. Prior permission from the authorities was sought and obtained. Individual informed consent was taken from study sample. The study sample was selected by sampling method based on sample selection criteria.

A total of 60 staff nurse from hospital were selected. First pre-test were collected from the subjects regarding knowledge and attitude on management of dengue hemorrhagic fever and followed by the computer teaching on management of dengue hemorrhagic fever were conducted for 50 minutes. Post test was measured after the teaching programme. The collected data were analysed and interpreted based at 0.05 level of significance.

CHARACTERISTICS OF STUDY SAMPLES

Regarding **age**, majority of subjects 39 (65%) were in the age group of 20-30 years. 21 (35%) were in the age group of 31-40 years, **gender** out of 60 subjects 19 (31.67%) were Male, 41 (68.33%) was female, **marital status** out of 60 subjects 38 (63.33%) were married, 22 (33.37%) was not married, **residence** out of 60 subjects 21 (35%) were living own house19(31.67%)were living in rented house and 20 (33.37)were living in hospital quarters, **type of family** out of 60 subjects 41 (68.33%) were nuclear family and 19 (31.67%) joint family, **professional education** out of 60 subjects 30(50%) were ANM and 21(35%) were Diploma in nursing 9 (15%)were graduate,. **Years of experience** out 60 subjects below 5 years experience 35(58.33%),6 to 10 years experience, 21(35%) and 11 to 15 years experience 4(6.7%), **Income** of 60 subjects 34 (68%)had 6000-8000, 21 (35%)had 9000-11000 and 4(6.7%) had above 11000, **Distance of work place** of 60 subjects with in campus 37(61.67%) were with in 6 kilo meters and 20(31.33%) above 6 kilo meters 3(5%). **source of information** 5(0.8%) were from mass media, 7(11.67%) were from magazine, 20(33%) were from news paper and 25(41.67%) were from TV and movie 3(0.5%).

FINDINGS

Objective 1: To assess the pre test knowledge regarding management of dengue hemorrhagic fever.

(a) Frequency and percentage distribution of staff nurse in selected area regarding their demographic factors.

- Distribution of subjects according to their 20-25 years 8 (16%), whereas age 26-30 years 12 (24%), age 31-35 years 20 (40%) and 36- 40years 10 (20%).

- Regarding **age**, majority of subjects 39 (65%) were in the age group of 20-30 years. 21 (35%) were in the age group of 31-40 years.

- On the basis of **gender** out of 60 subjects 19 (31.67%) were Male, 41 (68.33%) was female.

- On the basis of **marital status** out of 60 subjects 38 (63.33%) were married, 22 (33.37%) was not married.

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- Regarding **Years of experience** out 60 subjects below 5 years experience 35(58.33%),6 to 10 years experience, 21(35%) and 11 to 15 years experience 4(6.7%).

- Regarding **Income** of 60 subjects 34 (68%)had 6000-8000, 21 (35%)had 9000-11000 and 4(6.7%) had above 11000.

- Regarding **Distance of work place** of 60 subjects with in campus 37(61.67%) were with in 6 kilo meters and 20(31.33%) above 6 kilo meters 3(5%).

- Regarding the **source of information** 5(0.8%) were from mass media, 7(11.67%) were from magazine, 20(33%) were from news paper and 25(41.67%) were from TV and movie 3(0.5%).

Objective 2: To evaluate the effectiveness of the computed assisted teaching programme on dengue hemorrhagic fever among staff nurse.

Section A: Data on pre test and post test scores on level of knowledge and attitude regarding dengue hemorrhagic fever among staff nurse.

(a) Frequency and percentage of pre test and post test scores on levels of knowledge and attitude dengue hemorrhagic fever among staff nurse.

- Pre test 73.33% of them knew good knowledge and 25% of them average level of knowledge.

- Post test 58.33% of them knew excellent knowledge and 41.67% of them knew very good knowledge in management of dengue hemorrhagic fever.

- Frequency and percentage distribution of post test attitude scores level of staff nurses in pre test 98.33% of them got average level of practice whereas in post 91.67% of them very good level of attitude.

b. Mean, standard deviation (SD) and "t" value on pre test and post test scores on level of knowledge and attitude regarding management of dengue hemorrhagic fever among staff nurses

- In knowledge questions pre test score 11.58 (46%)and the post test score 21.2(85%) The mean difference percentage is 34%.In attitude pre test score 24.31 (38%) and post test score 43.26(68%) and the mean difference is 30%.It seems that computer assisted teaching was effective among staff nurses to improve the knowledge and attitude regarding management of dengue hemorrhagic fever.

- Paired 't' test was calculated to analyze the effectiveness between pre and post scores of knowledge and attitude regarding management of dengue hemorrhagic fever among staff nurses. The paired' t' test value in knowledge and attitude was 21.1and 31.65 respectively when compared to table value (2.001) both are high.

- In knowledge questions pre test score 11.58 (46%)and the post test score 21.2(85%) The mean difference percentage is 34%.In attitude pre test score 24.31 (38%) and post te3st score 43.26(68%) and the mean difference is 30%.It seems that computer assisted teaching was effective among staff nurses to improve the knowledge and attitude regarding management of dengue hemorrhagic fever.

Objective 3: To find the effectiveness between post knowledge and attitude regarding Management of dengue hemorrhagic fever among staff nurses with selected demographic variables.

- Frequency, percentage, chi square and P value regarding association between post test scores on level of knowledge and attitude regarding Management of dengue hemorrhagic fever among staff nurses with selected demographic factors

- Chi square value and P value regarding association between post test scores on level of knowledge regarding Management of dengue hemorrhagic fever among staff nurses with selected demographic variable such as age 1.18 (P = 0.05); marital status 0.066 (P = 0.05); residence 1.18 (P = 0.05); type of marriage 6.44 (P = 0.05); year of experience 1.18 (P = 0.05) types of family 1.18 (P = 0.05); professional education 11.1 (P = 12.59); income 2.65 (P = 0.05) distance of work 2.6 (P = 0.05); source of information3.248 (P = 0.05); There was no significant association between post test knowledge scores and other demographic variables such as age, marital status, residence, type of marriage, type of family, income, year of experience and sources of health information and there is significant association between the post test scores of level of knowledge and attitude regarding dengue hemorrhagic fever selected socio demographic factors is distance of work.

- Chi square value and P value regarding association between post test scores on level of attitude regarding Management of dengue hemorrhagic fever among staff nurses with selected demographic variable such as age 3.04

(P = 0.05);gender 0.3(P = 0.05);, marital status 0.93 (P = 0.05); residence 2.68 (P = 0.05); type of family 0.307(P = 0.05); year of experience 1.10 (P = 0.05) income 0.65 (P = 0.05); professional education 0.5 (P = 0.05); income 2.65 (P = 0.05) distance of work 2.6 (P = 0.05); source of information3.57 (P = 0.05); There was no significant association found between the post test scores when compared to other demographic variables such as age, gender, marital status, residence, professional education, type of family, income, year of experience, type of transport, distance from hospital and sources of health information.

IMPLICATIONS

The findings of the study have the following implication in nursing.

Nursing Practice

- Computer assisted teaching programme on management dengue hemorrhagic fever.
- Community health nurse should effectively use this measure to promote awareness about management dengue hemorrhagic fever.
- Computer teaching programme on management of dengue hemorrhagic fever is reducing the incidence and cause symptom,complication on dengue hemorrhagic fever in this age group.
- Community health nurse can involve the mothers on control and preventive measures on dengue hemorrhagic fever.

- It is an effective means of communication which provides public awareness to control the dengue hemorrhagic fever.

Nursing Education

- Nursing curriculum should lay more emphasis on the prevention on dengue hemorrhagic fever

- Nurse educator should have responsibility in upgrading the knowledge and attitude on management of dengue hemorrhagic fever. The curriculum committee can use the information obtained to integrate the knowledge and attitude regarding dengue hemorrhagic fever to the nursing education programme.

- The teaching programme can be utilized by the student to organize awareness programme regarding dengue hemorrhagic fever in school, collage as well as in the community.

- In-service education program should be conducted for nursing personnel.

Nursing Research

- Study will be valuable reference and pathway for further researchers.

- The findings if the study would help to expand the scientific body of professional knowledge upon which further researcher can be conducted.

- The study throws light on student's knowledge and attitude regarding management of dengue hemorrhagic fever. There is lot of scope for

exploring this area. More and more research can be carried out on the student's knowledge and attitude regarding management of dengue hemorrhagic fever to improve the health status of the community, to prevent the dengue hemorrhagic fever.

- Research can also be conducted to assess the learning needs of the staff nurse in hospital and the general public in order to increase the awareness of dengue hemorrhagic fever

LIMITATIONS

The study had following limitation,

- Random selection of sample was not done.
- Intervention was given only 50 minutes.
- Study was done on limited sample.
- Experience level of investigator.
- Study was conducted only in staff nurse in selected hospital, so the generalization of the finding is limited.

RECOMMENDATIONS

- The study sample can be replicated on a large sample.
- A similar study could be conducted with control group.

- A follow up study can be conducted to determine the effect of teaching in terms of gain in knowledge and attitude regarding dengue hemorrhagic fever

- A similar study can be conducted by using other teaching strategies like SIM, health education materials, booklets, pamphlets etc.

- A comparative study can be conducted between rural and urban women to assess their knowledge, attitude and attitude regarding dengue hemorrhagic fever.

- A similar study can be replicated in other population.

CONCLUSION

The following conclusion was drawn from the following study.

Dengue fever also known as “break bone” fever and Dengue Haemorrhagic Fever (DHF) which is life threatening and affect in children and adult.

Nursing administration plays an important role on supervision and management of nursing professional in order to improve their knowledge and attitude, skills and stay aware of the latest advancement in the technology to prevent complication of dengue hemorrhagic fever among the hospital. Nursing research essentially is a problem solving process; nurses have to gather information regarding facts, ethical issues about dengue hemorrhagic fever and change practices based on scientific knowledge and attitude.

REFERENCES

BOOKS

1. K. Park**. Text book of preventive and social medicine**. 19th edition. Jaypee publisher. New Delhi 2007.

2. Morrson and Arnold. **Communicable diseases.** 9th edition. S.A. Davis company Philadelphia. 1969.

3. Brunner and suddharth**. Text book of Medical and surgical nursing**. 10th edition. Lippincott William wilkins. New Delhi 2007.

4. BT Basavanthappa. **Nursing Research.9th edition.** Jaypee Publication. New Dlelhi 2005.

5. Denise,pilot, Cheryl tatano beck. **Nursing research.** 9th edition. Lippincott William Wilkins, India. 2010.

6. Ramalingam**.**S.H. **Text book of Community Medicine,** 1st edition.Samy publications. India 2006

7. Nancy. **Prevantable diseases**, 3rd Edition. Kamal publishing house. India 2006

8. Joyce M Black. **Text book of Medical surgical nursing**.12th edition, Missouri publishing house. New Delhi 2009

9. Lewis, sharon. **Text book of Medical surgical nursing**.7th edition, Mosby publishing house. India 2009

10. Mahajan BK. **Method in Biostatistics of Medical students and research workers.** 12th edition, Jaypee publishing house. New Delhi 2009

11. Suresh K.sharma. **Text book of nursing research.** 12th edition, Jaypee publishing house. New Delhi 2011.

JOURNALS

1. B. **Hebare**. Prevalence of dengue. Dissertation abstract International 2007; 74(9); 101- 104.

2. B**.G. Patil.** Assessment of Staff Nurses knowledge regarding pacemaker**. Journal of cardio vascular nursing** 2008; 34(4) : 12-15.

3. **Baruaj.J, Ananda S, Arun Kumar**.G Incidence of dengue **Indian journal pathology microbiology**. 2006. July;49(3):462-3.

4. Beckett CG, Kosasih H, Tan R, Widjaya S, Listianingsih E, Ma ' roef C,Wuryadi S,Alisjahbana B, Rudiman I, McArdle JL, Porter KR. "Enchancing knowledge and awareness of dengue during a prospective study of dengue fever." Southeast Asian Journal Tropical Medical Public Health.2004 Sep;35(3):614 -7

5. Caballero Hoyos R, Torres Lopez T, Chong Villarreal F, Pineda Lucatero A, Altuzar Gonzalez M, Lopez Coutino B. "**Cultural Conceptions on dengue** in urban contexts in Mexico". Rev Saude Publication. 2006 Feb; 40(1) : 126-33. Epub 2006 Jan 4.

6. **Chakracvarti A, Kumaria R.** Eco-epidemiological analysis of dengue 2005 April;14:2:32.

7. Cho-Min-Naing. "Assessment of dengue hemorrhagic fever in Myanmar". Southeast **Asain Journal Tropical Medical Public Health.** 2000 Dec; 31(4) : 636-41.

8. **Claro LB, Tomassini HC, Rosa ML**. " Dengue Prevention and control : a review of studies on knowledge, beliefs, and practices". Cad Saude Publications. 2004 Nov-Dec; 20(6) : 1447-57 Epub 2004 Dec 8.

9. **Deepa Mathew**. Assessment of knowledge on Dengue fever and its prevention. **Nurses voice** 2008; 3(4): 5-7.

10. **Dengue Fever :** Essential data. "The History and Natural History of Dengue Fever". Suzanne Moore Shepherd. "Dengue Fever". Nov. 26, 2007

11. Dengue outbreak in India. Date:01/09/2005 27.Ann Arbor. "Background on dengue fever from the **World Health Organisations**" Science Daily (July 31,1997).

12. Dr.Oswald D', Health planning; **Journal of Community Medicine** 2007 ; 3(11) ; 4-6.

13. **Favier C, Degallier N, Vilarinhos Pde T, de Carvalho Mdo S, Yoshizawa MA, Knox MB.** "Effects of climate and different management stratergies on Aedes aegypti breeding sites" **Tropical Medical International Health.** 2006. Jul; 11(7) : 1104-18.

14. Harris E, Videa E, Perez L et al. clinical Epidemiological and Virological features of dengue fever in the 1998 epidemic in Nicaragua.Am Med and Hyg 2000; 63: 5-11.

15. **Kabilan L, Balasubramanian S, Keshava SM, Thenmozhi** V,"Dengue disease spectrum among infants in the 2001 dengue epidemic in Chenni, Tamil Nadu, India".

16. **Kittayapong P, Chansang U, Chansang C, Bhumiratana A**. "community participation and appropriate technologies for dengue vector control at transmission foci in Thailand". **Journal America Mosquitoes control associations**. 2006 Sep; 22(3) : 538-46.

17. **LeeThomas**.Killer Diseases; **Journal of Continuing Nursing Education 2008**; 3(7); 10-11.

18. **Ms. Manpreet Kaur, Amanpreet Kaur,** Enhancement of knowledge of nursing students regarding dengue. **Nightingale Nursing times**.2007 Dce; (9):52-53.

19. **Ooi EE, Goh KT, Gubler Dj**. Dengue prevention. Emergency infections disease 2006 January; 12 (6):87-93.

20. **OP. Ghai, Piyush Gupta**, VK Paul. "Essential medical surgical". 5th Edition. New Delhi : Messrs Arnold Heinemann; 2000 P. No. 188

21. **P C Chawan**. Travel and dengue infection. Indian journal of international research. 2008; 6 (2):26-29.

22. Paramasivan R, Dhananjeyan K, Tyagi B, Dash AP. "Serological and entomological investigations of an outbreak of dengue fever in certain rural areas of Kanyakumari District, Tamil Nadu". Indian Journal Medical Research. 2006 May; 123(5) :697-701.

23. **Paramasivan R.** entomological investigation of an outbreak at dengue fever. **Indian journal of medical research** 2006.May;123(5):697-701.

24. **Poonam Joshi, Nanhini Subbhiah.** Nurse helping the people to choose their own health, **Nightingale nursing times**.2007 sep; 3 (6): 48.

25. **Prema Paul**. Nurses knowledge of their legal responsibilities towards patient care. **The nursing journal of India**.2007 sep; XCVIII No:9: 200.

26. Ranjit S, Kessoon N, Jaya Kumar I. " **Aggressive Management of Dengue shock syndrome** may decrease mortality rate". Pediatric Critical Care Medical. 2005 Jul; 6(4) : 412-9

1. **Samuel George**, Study proves learning needs of staff nurses in assessment of Psychosomatic Disorders. **Nightingale Nursing Times**.2008 may; 4 (2):27.

27. **Schwann Timsee**. Dreaded diseases- The true face. **American Journal of Nursing**, Feb 2007; 32-35.

28. **Sharma RS, Kaul Sm, Sokhay J.** Seasonal fuctuations of dengue fever vector. Southest Asian journal of Trop medical public health 2005 January;36(1):186-90.

29. **Simasathiens, watanaveeradeis**. Dengue vaccine. **Journal of medical association Thailand**. 2005.November;88 supply 3:s363-77.

30. **Sin: Thomas**.Dengue-the pandemic. **Journal of continuing nursing** 2005; (6) : 72-74.

31. **Singh N.P. outbreak of dengue fever in Delhi**. Department of medicine and micro biology. 2005 september;36 (5):1174-8.

32. **Sr. Gilgert,** Health student nurses Brighter tomorrow. **The nursing journal of India**.2007 may; XCVIII No:5101.

33. **Stephenson JR** Dengue pathogenesis world health organization. 2005 April;83(4):308-14.

34. Viajayakumar TS, Sridharan G, "Is dengue emerging as a major public health problems ?". **Indian Journal Medical Research**. 2005 Feb; 121(2) : 100-7.

35. **Vijay Kumar TS**. Diagnosis of dengue infection. **India journal of medical research** 2005. February; 121(2):100-7.

36. **Vijaya Naidu**. Dengue among frequent travelers. **Journal of curative nursing** 2009, 10 (8): 67-70.

37. WHO.Dengue/Dengue hemorrhagic fever. Weekly Epidemiological Reports

NETSOURCES

1) http ://www.med.yale.edu/library/

2) http ://www.webmed.com/content /tools

3) http ;/www.pubmed.com

4) http :/www.medline.com

5) http :www.hesonline.nhs.uk

6) http ://www.ncbi.nlm.nih.gov

7) http ;/www.ct c.gov/nchs

8) www.niddk.nih.gov

9) www.kidney.org

10) www.homedialysis cent ral.org

11) www.unos.org

12) www.Google.com

APPENDIX – I

LETTER SEEKING PERMISSION TO CONDUCT MAIN STUDY

From:
301612651
II year M.Sc (N) (Medical Surgical Nursing),
Sre sakthimayeil institute of nursing and Research ,
(J.K.K.Nattaraja Educational Institutions),
Kumarapalayam,Namakkal (dt).

To :

Forwarded Through
The Principal
Sre Sakthimayeil institute of nursing and Research ,
(J.K.K.Nattaraja Educational Institutions),

Respected Sir/Madam,

SUB: **Requesting permission to conduct main study**

I am 301612651 II year M.Sc (N) student of Sre sakthimayeil institute of nursing and Research ,(J.K.K.Nattaraja Educational Institutions),Kumarapalayam. I have selected the below mentioned topic for the research project to be submitted to as the partial fulfilment of university requirement for degree in Master of Nursing .
Title " A STUDY TO ASSESS THE EFFECTIVENESS OF COMPUTER ASSISSTED TEACHING ON KNOWLEDGE AND ATTITUDE REGARDING MANAGEMENT OF DENGUE HEMORRHAGIC FEVER AMONG STAFF NURSES IN SELECTED HOSPITAL, KERALA".
Regarding this project ,I am in need of your esteemed help and co-operation as I am interested in conducting the study in your institution. Hence, I request your good self to kindly permit me to conduct the proposed study under your jurisdiction and provide the necessary facilities for the study .Kindly oblige and do the needful.

Thanking you

Yours faithfully

(301612651)

PRINCIPAL
SRESAKTHIMAYEIL INSTITUTE OF
NURSING AND RESEARCH
KOMARAPALAYAM - 638 183

SRESAKTHIMAYEIL INSTITUTE OF NURSING AND RESEARCH * KOMARAPALAYAM-638183 *

APPENDIX – II

LETTER GRANTING PERMISSION TO COLLECT DATA FOR RESEARCH STUDY

From
301612651
II year M.Sc (N) (Medical Surgical Nursing),
Sre sakthimayeil institute of nursing and Research ,
(J.K.K.Nattaraja Educational Institutions),
Kumarapalayam,Namakkal (dt).

To
The Medical Director,
Huda Trust Hospital,
Kerala.

Respected Sir/Madam,

SUB: **Requesting permission to conduct Research study**

I would like to bring to your kind notice that 301612651M.Sc.(N) II YEAR student of Sre Sakthimayeil institute of nursing and Research ,Kumarapalayam, conducting a research on topic

"A STUDY TO ASSESS THE EFFECTIVENESS OF COMPUTER ASSISSTED TEACHING ON KNOWLEDGE AND ATTITUDE REGARDING MANAGEMENT OF DENGUE HEMORRHAGIC FEVER AMONG STAFF NURSES IN SELECTED HOSPITAL, KERALA". For the purpose of submission to the Tamil Nadu DR.M.G.R, Medical University ,Chennai, as a the partial fulfilment of university requirement for degree in Master of Nursing. I Kindly request you to grant me permission to conduct this study in Huda trust hospital, Kerala. Kindly do the needful.

Thanking you

PRINCIPAL
SRESAKTHIMAYEIL INSTITUTE OF
NURSING AND RESEARCH
KOMARAPALAYAM - 638 183

SRESAKTHIMAYEIL INSTITUTE OF NURSING AND RESEARCH * KOMARAPALAYAM-638183 *

Yours faithfully

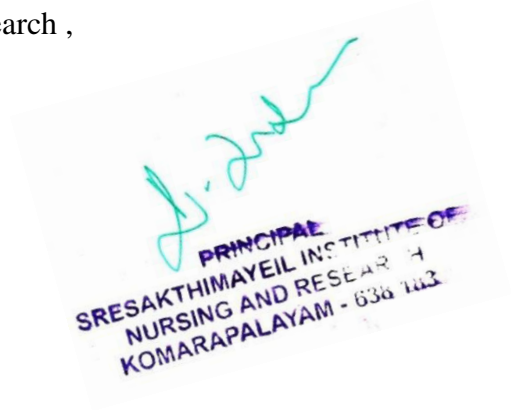
(301612651)

APPENDIX – III

LETTER REQUESTING OPINION AND SUGGESSTIONS OF EXPERTS FOR CONTENT VALIDITY TOOL

From

II year M.Sc (N) (Medical Surgical Nursing),
Sre sakthimayeil institute of nursing and Research ,
(J.K.K.Nattaraja Educational Institutions),
Komarapalayam,Namakkal (dt).



To

Through: The Principal
Respected Sir/Madam,

SUB: Content Validity – Requesting – valuable opinion & suggestions regarding

I am final year M.Sc (N) student of Sre sakthimayeil institute of nursing and Research ,(J.K.K.Nattaraja Educational Institutions),Kumarapalayam. In partial fulfillment of M.Sc (N) programme , I have selected the topic mentioned below for the research project which has to be submitted to the Tamil Nadu Dr.M.G.R Medical University .

Hereby I have enclosed the tool on **Management of Dengue Hemorrhagic fever**. Hence I request your good self to validate the tool & give your valuable opinion &suggestions for necessary modification of the same.

" A STUDY TO ASSESS THE EFFECTIVENESS OF COMPUTER ASSISSTED TEACHING ON KNOWLEDGE AND ATTITUDE REGARDING MANAGEMENT OF DENGUE HEMORRHAGIC FEVER AMONG STAFF NURSES IN SELECTED HOSPITAL, KERALA".

Thanking you in anticipation

Encl:Tool

Yours faithfully

(301612651)

APPENDIX –IV

LIST OF EXPERTS

1. **Dr.Mrs.Jamunarani.R.M.Sc,(N),Ph.D**
   Principal,
   Sresakthimayeil Institute of Nursing and Research,
   Kumarapalayam.

2. **Prof.Mrs.Gowri.B.M.Sc,(N).**
   Research Guide,
   Sresakthimayeil Institute of Nursing and Research,
   Kumarapalayam.

3. **Dr.Padmavathi,M.Sc,(N),Ph.D.**
   Principal,
   Dhanvantri College of Nursing,
   Pallakkapalayam.

4. **Dr,Gracy,M.Sc,(N),Ph.D.**
   Professor,
   Dhanvantri College of Nursing,
   Pallakkapalayam..

5. **Mrs.Valarmathi.K,M.Sc.(N).**
   Asst.Professor,
   Sresakthimayeil Institute of Nursing and Research,
   Kumarapalayam

6. **Dr.Mohammad bashir MD MS.**
   Medical Director,
   Huda trust Hospital,
   Kerala.

APPENDIX –V

CONTENT VALITIDY CERTIFICATE

NAME **: Mrs.Padmavathi,Ph,D.**

DESIGNATION **: Principal**

NAME OF THE COLLEGE: Dhanvantri college of nursing

I hereby certify that I have validated the tool of 301612561, M.SC(N), MEDICAL SURGICAL NURSING., II YEAR student Sresakthimayeil Institute of Nursing and Research, Kumarapalayam, who is undertaking the dissertation work on ," **A study to assess the Effectiveness of Computer Assisted teaching programme on knowledge and attitude regarding Management of dengue hemorrhagic fever among Staff Nurses at selected Hospital, Kerala.**

Signature of the expert

CONTENT VALITIDY CERTIFICATE

NAME : Mrs.Gracy,Ph,D.

DESIGNATION : Professor

NAME OF THE COLLEGE: Dhanvantri college of nursing

I hereby certify that I have validated the tool of 301612561 , M.SC(N) MEDICAL SURGICAL NURSING., II YEAR student Sresakthimayeil Institute of Nursing and Research, Kumarapalayam, who is undertaking the dissertation work on ”**A study to assess the Effectiveness of Computer Assisted teaching programme on knowledge and attitude regarding Management of dengue hemorrhagic fever among Staff Nurses at selected Hospital, Kerala.**

CONTENT VALITIDY CERTIFICATE

NAME: Mrs.Chandramathi,M.Sc,(N)

DESIGNATION: Professor

NAME OF THE COLLEGE: Dhanvantri college of nursing

I hereby certify that I have validated the tool of 301612561, M.SC(N)MEDICAL SURGICAL NURSING., II YEAR student Sresakthimayeil Institute of Nursing and Research, Kumarapalayam, who is undertaking the dissertation work on ,"**A study to assess the Effectiveness of Computer Assisted teaching programme on knowledge and attitude regarding Management of dengue hemorrhagic fever among Staff Nurses at selected Hospital, Kerala.**

Signature of the expert

CONTENT VALITIDY CERTIFICATE

NAME **: Mrs.Valarmathi.K, M.S,c.(N)**

DESIGNATION **: Asst .Professor**

NAME OF THE COLLEGE **:** Sresakthimayeil Institute of Nursing and Research

I hereby certify that I have validated the tool of 301612561 ,M.SC(N)MEDICAL SURGICAL NURSING., II YEAR student Sresakthimayeil Institute of Nursing and Research, Kumarapalayam, who is undertaking the dissertation work on ," **A study to assess the Effectiveness of Computer Assisted teaching programme on knowledge and attitude regarding Management of dengue hemorrhagic fever among Staff Nurses at selected Hospital, Kerala.**

Signature of the expert

APPENDIX – VI

CERTIFICATE BY THE ENGLISH EDITOR

This to certify that the dissertation entitled **"A study to evaluate the Effectiveness of Computer Assisted teaching programme on Knowledge and Attitude about Management of DENGUE HEMORRHAGIC FEVER among Staff Nurses in selected Hospital, Kerala.** is a bonafied research work done by 301612561,II year M,Sc.Nursing student Sresakthimayeil Institute of Nursing and Research,(JKK,Nattaraja Educational Institutions) Kumarapalayam**.**

APPENDIX – VII

CERTIFICATE BY THE STATISTICIAN

This to certify that the dissertation entitled **"A study to evaluate the Effectiveness of Computer Assisted teaching programme on Knowledge and Attitude about Management of DENGUE HEMORRHAGIC FEVER among Staff Nurses in selected Hospital, Kerala"** has been statistically analyzed under the consultation and guidance of the statistician has been statistically analyzed under the consultation and guidance of the statistician.

Signature of the Statistician

(K. DHANAPAL)

APPENDIX – VIII

DATA COLLECTION QUESTIONNAIRE IN ENGLISH

STRUCTURED INTERVIEW QUESTIONNARIE TO ASSESS THE KNOWLEDGE ON MANAGEMENT OF DENGUE HEMORRHAGIC FEVER

Instruction:

The researcher will ask question and tick the option according to the response of the subject.

- This tool consist of 30 question
- For each question 4 answer are given
- Among the 4 options one will be the correct answer
- Answer will be used only for research purpose and will be kept confidential.

KNOWLEDGE REGARDING DENGUE HEMORRHAGIC FEVER

1) What is dengue fever?

a. Water borne disease

b. Vector borne disease

c. Air borne disease

d. Zoonotic disease

2)What is the sever form dengue fever?

a. Yellow fever

b. Typhoid fever

c. Dengue hemorrhagic fever

d. Dengue shock fever

KNOWLEDGE REGARDING CAUSE AND RISK FACTOR OF DENGUE HEMORRHAGIC FEVER

3) **Which infective agent is responsible for dengue fever?**

a. Virus

b. Bacteria

c. Fungus

d. Protozoa

4)which species of mosquito can carry the dengue fever?

a. Female anopheles
b. Female aedes
c. Male aedes
d. Male anopheles

5).How does Aedes mosquito looks like ?

a. Big mosquito
b. Small mosquito
c. Black mosquito with white strips
d. Black mosquito with green strips

6).Which age group is commonly affected by dengue hemorrhagic fever ?

a. Old age
b. Adult
c. Children
d. Adolescent

7).In which season dengue fever is more prevalent ?

a. Summer season
b. Rainy season
c. Winter season
d. Post rainy season

8).In which water the Aedes mosquito commonly breed ?

a. Clean and storage water
b. Drainage water
c. Dirty water
d. Rain water

KNOWLEDGE REGARDING SIGNS AND SYMPTOM OF DENGUE HEMORRHAGIC FEVER

9). How is dengue hemorrhagic fever spread ?

a. By human to human
b. By mosquito bite
c. By un hygienic habits
d. By eating unhealthy

10). what is incubation period of dengue hemorrhagic fever ?

a. 2-7 days
b. 5-10 days
c. 4-8 days
d. More than 10 days

11). Dengue hemorrhagic fever is characterized by ?

a. Fever ,rash
b. Very high fever
c. Malaise
d. All of the above

12).Which is the early signs and symptom of dengue hemorrhagic fever ?

a. Very high fever, headache, muscle and joint aches, malaise, decreased appetite
b. High fever, headache, muscle and joint aches
c. Headache, muscle and joint aches, malaise
d. Very high fever, headache, muscle and joint aches, indigestion.

13).Which of the following is a symptom of Dengue Hemorrhagic Fever?

a. Small red or purple blisters under the skin
b. Fever with rash
c. Bleeding in the nose or gums
d. All of the above

14).Which is the signs and symptom of dengue hemorrhagic fever ?

a. Petechiae epistaxis(nose bleed), gingival bleeding (gum bleed) Microscopic hematuria.
b. Increased blood pressure
c. Anemia
d. Ulcer

15). The following are signs and symptoms manifested by a patient in the febrile phase of

Dengue Fever, except:

a. High fever
b. Rash
c. Petechiae

d. Severe GI bleeding

16). Which is the test to conform dengue hemorrhagic fever ?

a. Urine test
b. Blood test
c. Tourniquet test
d. Stool test

KNOWLEDGE REGARDING COMPLICATION OF DENGUE HEMORRHAGIC FEVER

17) What is the complication of dengue hemorrhagic fever ?

a. Shock
b. Severe hemorrhage and organ impairment
c. Inflammation of stomach
d. Inflammation of gall bladder

18).Why severe haemorrhage occurs to dengue hemorrhagic fever ?

a. A decrease in platelet levels
b. Repeated falls
c. Eating spicy foods
d. A decrease white blood cells

KNOWLEDGE REGARDING MANAGEMENT OF DENGUE HEMORRHAGIC FEVER

19). What will you do if there is a person affected with dengue hemorrhagic fever ?

a. Keep the affected person at homes itself
b. Advice to take self medication
c. Report to the health personnel without delay
d. Advice to take rest

20).What is the preventive measure for dengue hemorrhagic fever ?

a. Elimination or cleaning of water-holding containers
b. Eating healthy foods
c. Prevention of Aides mosquito breeding bites
d. Vaccination

21).How can you prevent the spread of dengue hemorrhagic fever ?

a. Wearing face mask
b. Do not have any physical contact with other people
c. Covering the mouth when you cough or sneeze
d. Clearing stagnant water

22).How will you protect from Aides mosquito bite ?

a. Keep the door and window open
b. Cover the mouth and nose
c. Wear cotton cloth
d. Use mosquito coil

23).How will you prevent spread of dengue infection form an infected person?

a. Protect the client from Aides mosquito bite
b. Protect the client from contact with others
c. Keep the client in a separate room
d. No need of preventive measure

24).Which type of diet will be given to dengue fever client ?

a. Bland diet
b. Spicy diet
c. Normal diet
d. Balanced diet

25).What will you do to reduce fever at home

a. Over wrap the client
b. Provide oral fluids
c. Separate the client
d. Give paracetamol tablet with tepid sponge

26).Which of the following is used to kill mosquito larve in water

a. Pairs green abate solution
b. Chlorine
c. Bleeching powder
d. Iodine

27).Where the chances are high for the water stagnation ?

a. Coconut shell
b. Discarded tyre

c. Broken pot and bottles

d. All of the above

28).How to protect the storage water at home ?

a. Cover with shell

b. Water kept in open pot

c. Usage of well water

d. Usage of dirty / unfiltered water.

29). What type of diuretic should be given to the patient To prevent fluid overload?

a. Loop diuretic

b. Potassium-sparing diuretic

c. Osmotic diuretic

d. None of the above

30).What is the treatment for dengue hemorrhagic fever (DHF)?

a. Fluid replacement therapy

b. Anti coagulant therapy

c. Anti inflammatory drug

d. Anti pyretic drugs

CHECK LIST TO ASSESS THE ATTITUDE ON MANAGEMENT OF DENGUE HEMORRHAGIC FEVER

Instructions to the interviewer: You are requested to select the most appropriate choice given below.

S no	Content	Strongly agree	Agree	Un certain	Dis agree	Strongly disagree
1	Disposing water holding containers (cups, boxes, bottles, etc.)					
2	Should you consult a doctor for dengue fever?					
3	Is it government's responsibility to prevent dengue?					
4	I am motivated to find more information about dengue hemorrhagic fever.					
5	Can we individually contribute to prevent dengue?					
6	I will treat a patient suspected of Dengue fever with home remedies					
7	Fogging is not essential enough for prevention of dengue					
8	I am afraid of dengue fever					
9	Dengue hemorrhagic fever is a serious illness					
10	Dengue fever cannot be prevented					
11	I am at risk of getting dengue					
12	It is not necessary to seek immediate treatment for					

S no	Content	Strongly agree	Agree	Un certain	Dis agree	Strongly disagree
	dengue fever as there is no cure for it					
13	The public has the most important role in dengue control					
14	It is not the responsibility of the public health staff and local government in the prevention of dengue.					
15	Elimination of larvae breeding is a complete waste of time					
16	There is a high chance for dengue to spread in the future					

APPENDIX – IX

PLANNED COMPUTER ASSISTED TEACHING PROGRAMME ON MANAGEMENT OF DENGUE HEMORRHAGIC FEVER

Name of the student teacher	: 301612651
Topic	: Management of dengue hemorrhagic fever
Group	: Staff nurses
Group size	: 60
Place	: Huda hospital, Kerala
Method of Teaching	:Lecture cum discussion
A V Aids	: LCD Projecter, Chart, Models
Duration	:50 minutes
Medium of instruction	: English

General objectives

At the end of teaching the staff nurse will gain adequate knowledge, demonstrate desirable practice effectively for dengue hemorrhagic fever in their staff nurse

Specific objectives

Staff nurse will be to

- Define dengue hemorrhagic fever
- Explain about special characteristics of Aedes mosquito
- Discuss about Epidemiological feature
- Explain about mode of transmission
- Enumerate the life cycle of mosquito
- Explain about incubation period
- List out the dengue hemorrhagic fever
- Enlist the signs and symptom of dengue hemorrhagic fever
- Explain the laboratory test of dengue hemorrhagic fever
- Explain about management dengue hemorrhagic fever
- List down the complication dengue hemorrhagic fever

Time	Specific objective	Content	Teacher Learner activity	AV Aids	Evolution
		Introduction Dengue is the most important mosquito-borne, human viral disease in many tropical and sub-tropical areas. In India ,the risk of dengue is dramatically ncreased in recent years duo to rapid urbanization life changes and deficient water management.Improve water storage ,in urban,peri-urban and rural areas read to posification of mosquito breeding sites **Definition** Dengue is an infection caused by dengue virus, which is spread in human being by Aides oibopictus mosquito. The fever caused by dengue is called dengue fever. Severe form dengue is called dengue hemorrhagic fever. **Incidence :** Estimates of the number of people infected each year range from 50 million to 100 million . Each year, over one million clinical cases of DF and 500,000 cases of DHF require hospitalization. DHF has a mortality rate of ~5%. Specific characteristics of Aides mosquito:			

Time	Specific objective	Content	Teacher Learner activity	AV Aids	Evolution
		➢ Aides mosquito looks like black colour and white stripes marking on their body and legs. ➢ It can fly maximum 100-200 meters per day. ➢ They are more found in tropical and sub tropical regions. ➢ It can breed only in fresh stagnant water and rain water. **Epidemiological features:** **Agent :** Dengue is caused by group b arbovirus and the virus has four district antigenic serotypes 1,2,3 and 4 and is transmitted by certain species of Aides mosquito examples of *A. aegypti* **Host** **Age** It occur at age but it is very common among children under the age of 15 years duo to low immunity against disease. it can also affect old age people. **Environment** Season (post rainy season)			

Time	Specific objective	Content	Teacher Learner activity	AV Aids	Evolution
		It is present all the time. but it is very common during rainy season duo to water stagnation and collection of water in discarded items. So it is more common in post rainy season. **Breeding sources** Aides mosquito breed in small collection of fresh water in discarded container such as disposal tea cups, coconut shells, old tyres and grinding stone ,open water tanks, unclosed vessels and utensils. **Mode of transmission** **Mosquito transmit dengue infection** Transmission of the virus is mosquito there are Aides aegepti and aides albopitus **Transmission cycle** Humans are infected with dengue viruses by the bite of an infective mosquito . *A. aegypti*, the principal vector, is a small, black-and-white, highly domesticated tropical mosquito that prefers to lay its eggs in artificial containers commonly found in and around homes. **Infected man – mosquito-healthy man**			

Time	Specific objective	Content	Teacher Learner activity	AV Aids	Evolution
		Life cycle of Aides mosquito Aides mosquito lays egg in water .within 2-3 days it becomes larvae .it become pupa after 4-5 days. it become an adult female mosquito are 7-10 days. **Incubation period** Incubation period is 2-7 days. incubation period means internal between the entry of microorganism and development of sign and symptoms. **Clinical features** : starts abruptly with • The initial temperature may rise to 102 to 105°F, and fever may last for 2 to 7 days. • The conjunctivae may be injected, and the pharynx may be inflamed. Lymphadenopathy is common • headache plus respiratory and intestinal symptoms with sore throat, cough, nausea, vomiting, and abdominal pain. • Shock occurs after 2 to 6 days with sudden collapse, cool clammy			

Time	Specific objective	Content	Teacher Learner activity	AV Aids	Evolution
		extremities, weak thready pulse, and blueness around the mouth (circumoral cyanosis). • There is bleeding with easy bruising, blood spots in the skin (petechiae), spitting up blood (hematemesis), • blood in the stool (melena), • bleeding gums and nosebleeds (epistaxis). Pneumonia and heart inflammation (myocarditis) may be present. **Laboratory diagnosis:** 1.Serological Test – ELISA – To Detect Antibody 2. Non Structural Protein (NS1 antigen) Test 3. Virus isolation 4. RT-PCR MOH Clinical laboratory findings associated with dengue fever include a neutropenia followed by a lymphocytosis, often marked by atypical lymphocytes. • Liver enzyme levels in the serum may be elevated; the elevation is usually			

Time	Specific objective	Content	Teacher Learner activity	AV Aids	Evolution
		mild, but in some patients, alanine aminotransferase and aspartate aminotransferase levels reach 500 to 1,000 U/ litre. In one epidemic of DEN-4, 54% of confirmed patients with data reported on liver enzymes had elevated levels. Platelets The normal amount of platelets is 2,00,000-5,00,000 mm^3. • Thrombocytopenia is also common in dengue fever; in the above epidemic, 34% of patients with confirmed dengue fever who were tested had platelet counts of less than 100,000/mm^3 **Hematocrit** It is increased by 20 % or more. **Complications** • Febrile phase - Dehydration • Critical phase - Shock from plasma leakage: severe hemorrhage; organ impairment = Dengue Shock Syndrome • Recovery phase - Hypervolaemia			

Time	Specific objective	Content	Teacher Learner activity	AV Aids	Evolution
		Management of dengue hemorrhagic fever: ➢ The management of dengue fever and dengue hemorrhagic fever is urgent and symptomatic ,supportive. ➢ Provide adequate rest for patient with dengue fever and dengue hemorrhagic fever ➢ Instruct the infected person under the mosquito not to spread of disease to others. ➢ Record the vital signs ➢ Give oral fluids ➢ Antipyretics and tepid sponge ➢ Patient with any signs of bleeding should be admitted in hospital. ➢ Special ward is available in hospital. **PREVENTION AND CONTROL:** Prevention and control of dengue and DHF has become more urgent with the expanding geographic distribution and increased disease incidence in the past 20 years.			

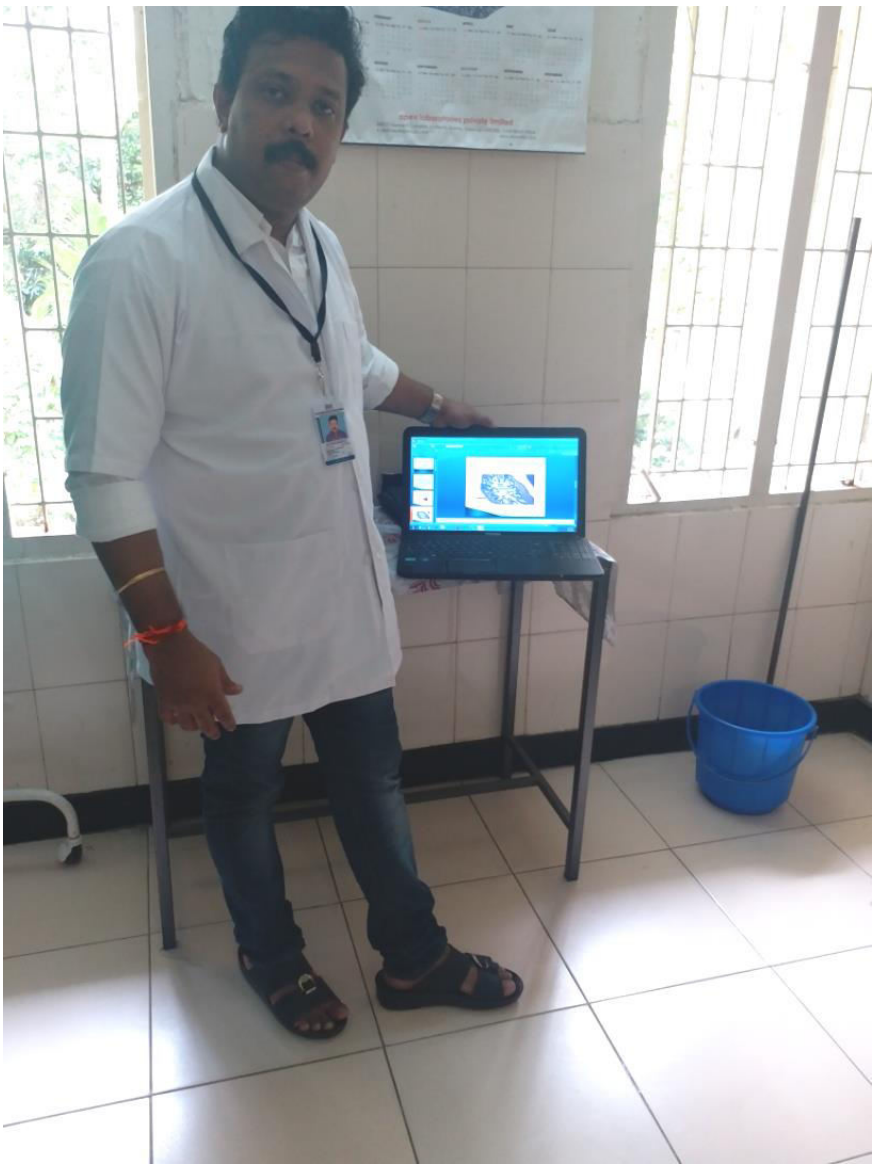
Time	Specific objective	Content	Teacher Learner activity	AV Aids	Evolution
		There is no vaccine currently available , and options for mosquito control are limited. ***Active surveillance***. Active disease surveillance is an important component of a dengue prevention program. In addition to monitoring secular trends, the goal of surveillance should be to provide an early-warning or predictive capability for epidemic transmission, the rationale being that if epidemics can be predicted, they can be prevented by initiating emergency mosquito control. ***Mosquito control.*** Prevention and control of dengue and DHF currently depends on controlling the mosquito vector, *A. aegypti*, in and around the home, where most transmission occurs. Space sprays with insecticides to kill adult mosquitoes are not usually effective unless they are used indoors. The most effective way to control the mosquitoes that transmit dengue is larval source reduction, i.e., elimination or cleaning of water-holding containers that serve as the larval habitats for *A. aegypti* in the domestic environment.			

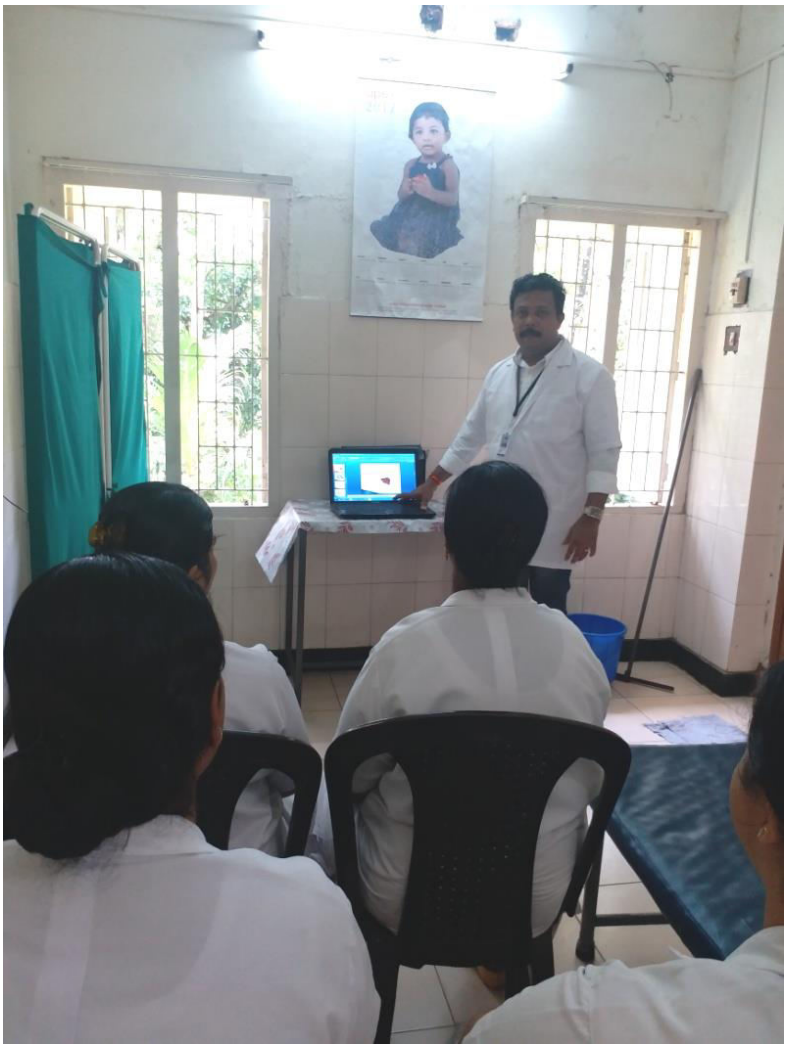
Time	Specific objective	Content	Teacher Learner activity	AV Aids	Evolution
		Prevention of Dengue in Travellers There is no completely effective method of preventing dengue infection in travelers visiting tropical areas. The risk of infection can be significantly decreased, however, by understanding the basic behavior and feeding habits of the mosquito vector and by taking a few simple precautions to decrease exposure to infective mosquito bites. Female *A. aegypti* mosquitoes prefer to feed indoors, with peak biting activity occurring for 2 to 3 hours after daybreak and for 3 to 4 hours before nightfall. Although the risk may be higher at these times, it is important to remember that the mosquito may feed indoors at anytime during the day as well as outdoors, especially on overcast days. Precautions, therefore, include staying in screened or air-conditioned rooms, spraying these rooms with aerosol bomb insecticides to kill adult mosquitoes indoors (especially in bedrooms), using a repellent containing dimethyl-metatoluamide (DEET) on exposed skin, and wearing protective clothing treated with a similar repellant. The risk of exposure may be lower in modern, air-conditioned hotels with well-kept grounds and in rural areas.			

Time	Specific objective	Content	Teacher Learner activity	AV Aids	Evolution
		Conclusion: Dengue is vector borne disease . so it is a responsible of every individual in the staff nurse to get awareness of dengue and dengue hemorrhagic fever and to necessary action for management on dengue and dengue hemorrhagic fever. **Summary:** Till now we have discussed about definition, epidemiology factors, mode of transmission, signs and symptoms, diagnosis, management of dengue hemorrhagic fever.			

APPENDIX – X

PHOTOGRAPHS



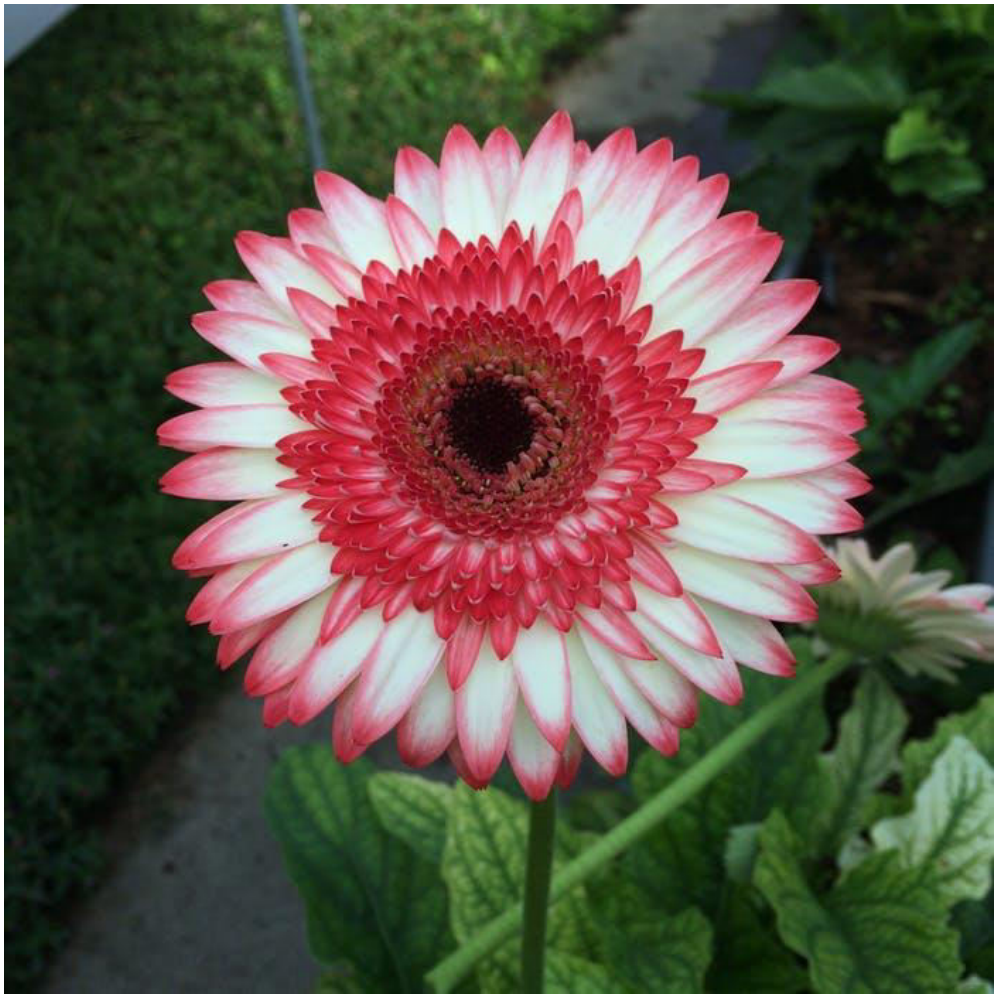


CERTIFICATE

DECLARATION

ACKNOWLEGEMENT

ABSTRACT



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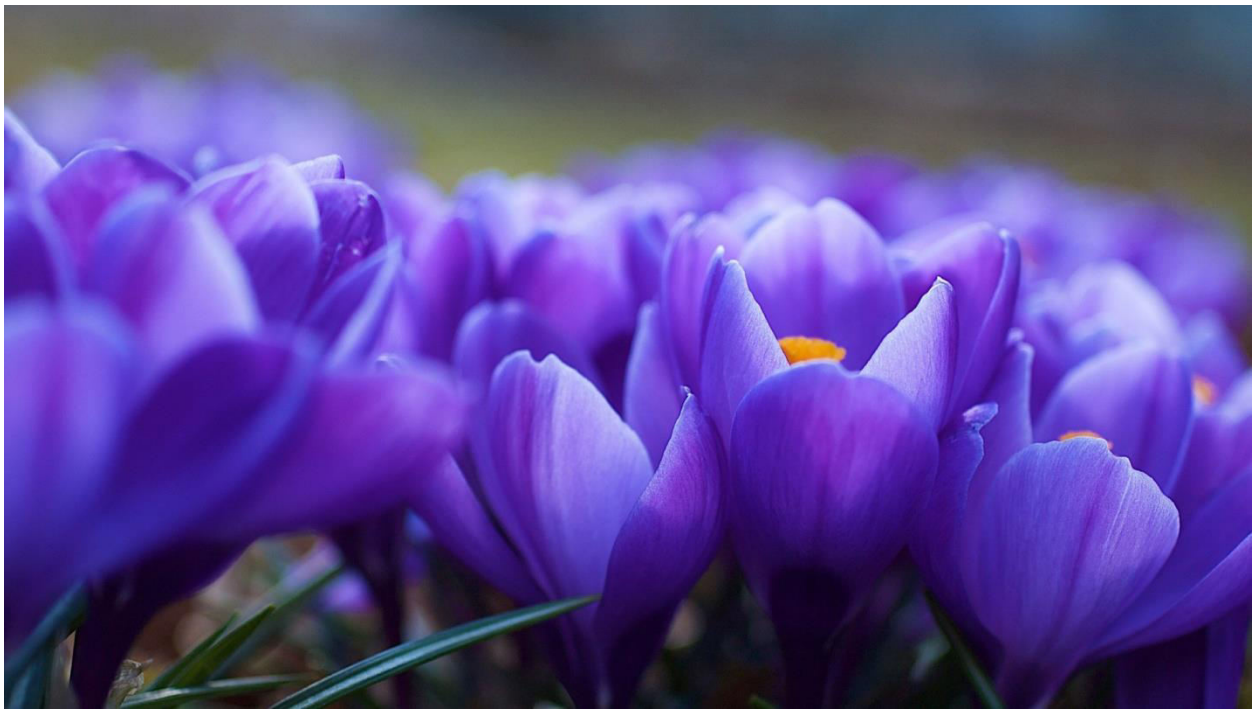

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